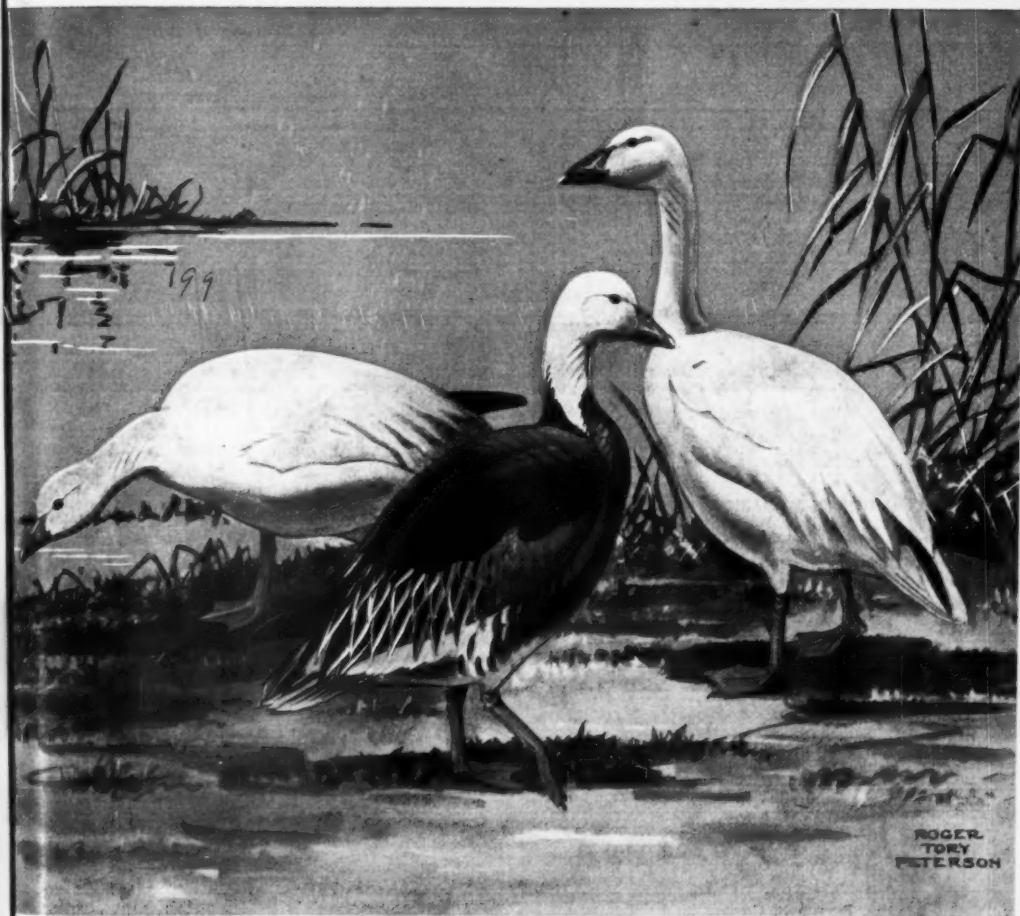


Science

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AUDUBON MAGAZINE

Formerly BIRD-LORE



ROGER
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THIRTY-FIVE CENTS

NOVEMBER-DECEMBER, 1942

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TWO SECTIONS-SECTION I

AUDUBON MAGAZINE

A BI-MONTHLY MAGAZINE DEVOTED
TO THE PROTECTION AND PRESER-
VATION OF OUR NATIVE WILDLIFE

Our Motto: A BIRD IN THE BUSH IS WORTH TWO IN THE HAND

ARTHUR A. ALLEN
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Audubon Magazine's Forty-Third Christmas Bird Count

THE Christmas Bird Count will be published, as usual, in the January-February issue of *Audubon Magazine*. As we embark on our second year of conflict the restrictions of a war-time world are increasingly felt. A loiterer with binoculars is looked at askance, and along the coast he may be picked up as a possible saboteur unless he carries a special permit. Even so, much can be done without glasses in these areas, and throughout most of the country you may engage in this traditional Christmas season pastime without inconvenience. Rejection of reports will again be necessary where the rules given below are disregarded.

Method of Taking

1. Counts shall be made between December 20 and 27 inclusive. In no case should they be taken earlier or later than these dates.

2. Subspecific names, such as *Mississippi* song sparrow, are to be omitted in all cases where birds are subspecifically identified merely on the basis of the assumption that they must be the subspecies named because of the locality in which they are found. Where they are identifiable in the field, they may be included. Where they do not obviously relate to the species name—as *long-tailed* jay and *Nicasio* jay (both races

of the California jay)—subspecific names will be accepted.

3. Diameter of the total area covered may not exceed 15 miles.

4. Each count must last at least six hours and may not extend beyond one calendar day. Counts made between sunrise and sunset are bound to be more representative than those taken during a shorter period of time, and it is felt that six hours is the absolute minimum time in which it is possible to obtain a representative picture of the birds present in a given locality.

5. Birds not actually recorded in the area itself are not to be included in the totals. Where an individual or group hunts separately in an assigned section of a territory, care must be used to avoid duplication in numbers, particularly in going to and from such an area.

6. A numerical value is to be given to numbers of birds seen. Where estimates are necessary, these should be as accurate as possible, and clearly indicated to be such. Avoid such words as "abundant" and "common."

7. Exotic species are to be included. Birds such as Hungarian partridge, English sparrow and pheasant are to be counted on the same basis as native birds.



4

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8. Each participant or each party should submit only one report. Without wishing to appear ungrateful to those contributors who have assisted in making the counts so remarkably successful, lack of space compels us to ask each individual or group to send only one report. Where two separate counts are received from the same area, only the more representative will be printed. Wherever possible, we urge individuals to combine reports. This not only insures a more accurate count, but presents an opportunity for bird students to become better acquainted. Names of interested individuals can usually be obtained by checking previous Christmas counts or by consulting the membership lists of local bird clubs.

Method of Reporting

1. No report received later than January 3 will be printed. Air mail from any part of the country should reach us within 24 hours. Send all counts to the Editor, 1006 Fifth Avenue, New York, N. Y.

2. Each report should be typewritten, double-spaced, and on one side of paper only.

3. Weather conditions must be indicated.

4. Each report must be submitted in A.O.U. 'Check-List' order, 1931 edition. This order and nomenclature is followed in R. T. Peterson's "A Field Guide to the Birds" and in his "A Field Guide to Western Birds."

5. Each report must follow style of sample count given below. Please follow punctuation. Do not submit records in columnar form, but have one record follow another in a single paragraph. Use no ditto marks, and no parentheses around numbers.

Cadiz, Ohio (fields and woods as far as 5 miles west of Cadiz, and 3 miles along shore of Tappan Lake of Muskingum Conservancy District, about 15 miles west of Cadiz)—Dec. 22; 6:30 A.M. to 5 P.M. Cloudy; ground bare; wind west, light to moderate; temp. 32° at start, 36° at return. Nine observers in two parties. Total hours afield, 17 (15 by foot, 2 by car); total party miles, 48 (8 by foot, 40 by car). Mallard, 10; Black Duck, 32; Pintail, 2; Am. Golden-

eye, 1; Cooper's Hawk, 1; Red-tailed Hawk, 2; Sparrow Hawk, 6; Bob-white, 1; Florida Gallinule, 1 (seen both on bank and in water of marsh, watched at 200 feet with high-powered glasses—Patterson); . . . Song Sparrow, 21. Total, 36 species; 504 individuals.—H. B. McCONNELL, JOHN G. WORLEY, ROBERT PATTERSON. . . . JOHN C. WORLEY.

6. Each report must include total number of observers, and total number of party hours and party miles that all observers spent in the field by foot, car or boat.

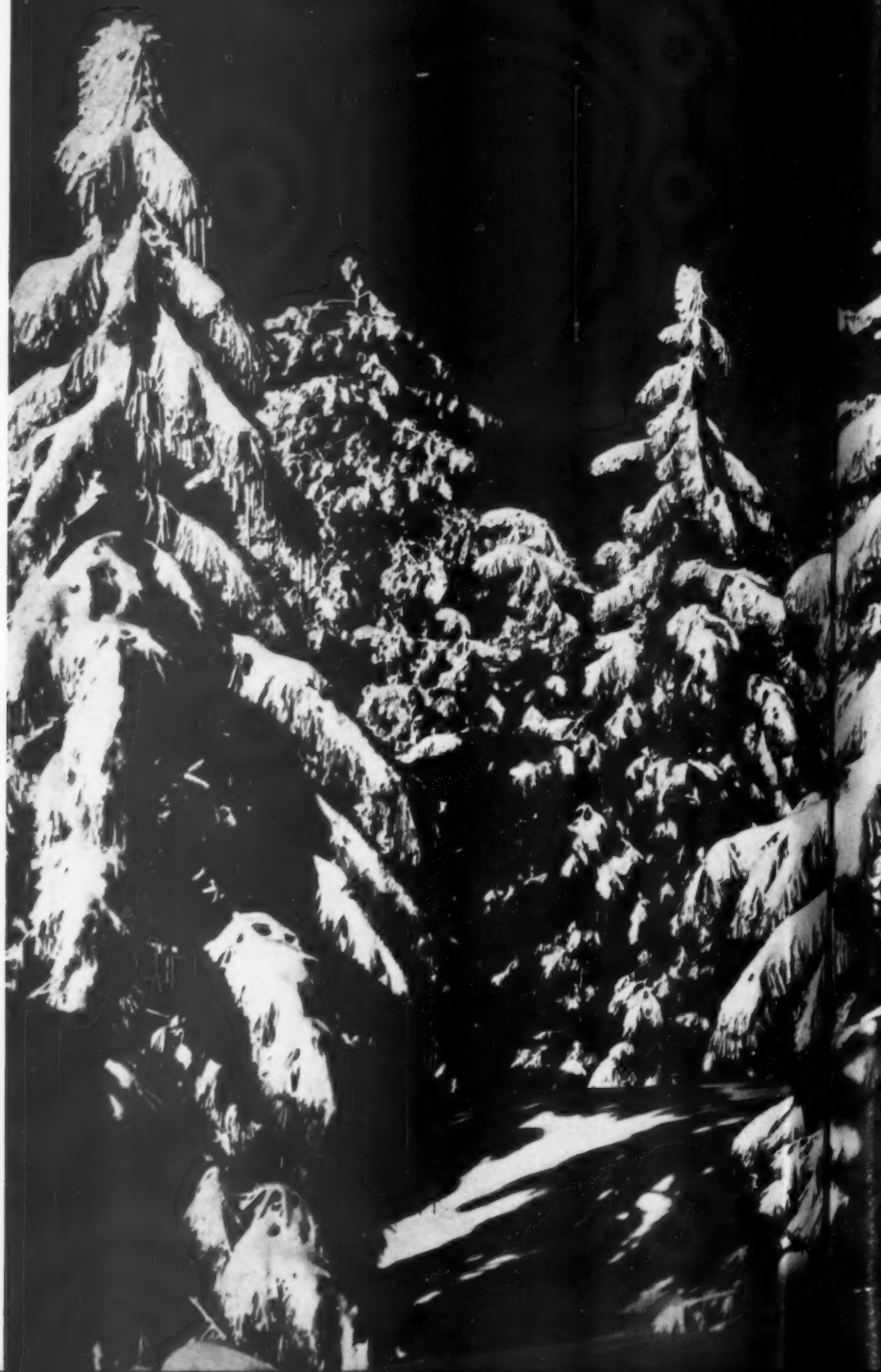
7. Include names and addresses of all participants. Reports by bird clubs may include the club name, but should also contain names of individual members who took part in compiling the list.

8. Each unusual record must be accompanied by a brief statement as to the means of identification. When such record occurs in a combined list, give names of those responsible for the identification.

The ornithological value of these counts will be increased as the work is standardized. Those participating are urged to cover the same territory annually, in the same amount of time. Participants wishing to improve the scientific value of their reports may benefit by following the suggestions contained in the article by Dr. Leonard Wing and Millard Jenks, "Christmas Censuses: The Amateurs' Contribution to Science," *Bird-Lore*, November-December, 1939, pp. 343-350.

Christmas Count Club

Again this year we shall enroll the Christmas Bird Count Clubbers, and we hope for a 100 per cent enrollment—ten cents from every person taking part in the bird count. Such contribution is in no sense obligatory, but it does help us realize our ambition to print every report received which has been impossible in the past because of lack of funds. This Club was inaugurated two years ago, and more than half of the Counters have joined, stating that "ten cents is small recompense for the enjoyment I have derived from participating in this work."





The Animals Talk on Christmas Eve

A minister and ornithologist reflects upon man's age-old recognition of his fellowship with lesser creatures

By J. J. Murray

PERSISTENT throughout England in medieval days was the belief that if one went into the stableyard at midnight, just when Christmas Eve was turning into Christmas Day, he would hear the cattle talk. That hour was given to them, it was thought, to tell again the story of that hallowed Eve when ox and ass, even before shepherd and wise man, made welcome for the child in Bethlehem. It was but a tale, of course, with the mixture of reverence and superstition, of crudity and insight, which belonged to that medievalism which certainly knew much less than we know about the uniformity of nature but which possibly knew a good bit more than we about the unity of living. It was of a part with the practice of including cattle in the distribution of Christmas gifts. It was fitting, men felt, that these animals that once shared with the Christ child their stable, should have some small part in each recurring Christmas Eve. So in *Puer Nobis*, one of the loveliest of the German carols of the fifteenth century, it was put,

Cradled in a stall was he
With sleepy cows and asses
But the very beasts could see
That he all men surpasses.

All this was a naive way of expressing their consciousness of man's unity with the animal creation, their sense of the interdependence of

all living things, their conviction that anything of great spiritual significance must needs have some consequences even in the realm of the material.

There is something of this sense of the unity of life not only in the myth of talking cattle but also in the ancient, hallowed spell of Bethlehem itself,—the belief that the God who at the first Christmas touched human life supremely still touches all of life. Our humbler brothers of field and forest have real place in his concern. "For every beast of the field is mine, and the cattle upon a thousand hills," the writer of the 50th Psalm makes him say. "I know all the birds of the mountains: and the wild beasts of the field are mine." Ox and ass were present at the cradling of that child; and he never forgot his humble, holy birthplace. Never did he go far in his sympathies from these patient beasts, nor fail to be interested in the things and creatures of the soil. The earth to him was sacred. It never became to him, even in his most sorrowful hours, what it has too often seemed to some of his followers, merely a vale of tears, a place of woe and sin. It was his father's world, and so a place of beauty and enchantment. In the lily and the sparrow he found humble friends to point his lucid, immortal tales; and with them he found companionship and surcease at times from human hate and human striving.

Not the supreme point, indeed, but one point in the Christmas story of real import to all lovers of the earth is the truth that we who are human are of one blood with all created things, and that thus we need perennial fellowship with St. Francis' Brother Sun and Sister Moon, Brother Wind and Sister Water, yes, with Brother Ox and Brother Ass. Man is no ethereal being; he has his roots in

the soil from which spring arbutus and goldenrod, and thistle as well, on which live chipmunk and Carolina wren and California quail. For though, if we know our faith is true, we are more—in origin, in high purpose, and in final destiny—than Brother Ox and Brother Ass, we, like them, have come from the earth: and it is at our peril that we withdraw too far from it.

The writer, who is a minister, believes in the philosophy of a balanced life. We proud, weak, high-purposed men and women have many relationships and many needs: not one can safely be neglected, not one safely magnified to the neglect of others. Man's nature is complex: his needs, therefore, are far from simple. He can



JAMES JOSEPH MURRAY was born in Summerville, South Carolina, January 23, 1890. He attended Davidson College and Union Theological Seminary in this country, and the United Free Church College in Glasgow, Scotland, and Oxford University in England. In 1918-19, he served as Chaplain with the 12th Infantry, and since 1924, he has been the minister at the Presbyterian Church in Lexington, Virginia. His interest in birds and the whole field of nature began many years ago, and in 1934 he became one of the directors of the National Audubon Society. He is a member of the A.O.U., and is editor of *The Raven*, the official publication of the Virginia Society of Ornithology.

live with little—with bread and meat and a coat and a roof—but not truly live, and well. He has a need for worship, and a need for work; he has a need for human companionship, and a need for meditation; he has a need for some high task that will stir him at times, and a need on other days for quiet comradeship with his mother Nature. For full contentment, for rich development, for rounded living, a man must have his look upward, his anchoring place outside himself and in the eternal; he must have his reach outward, his self-forgetfulness in the human brotherhood; and he must not fail to have, also, his solid grounding on the earth from which he came and with which all of him that is mortal must one day be reunited. Failing the first, he can have little abiding peace for days bright or hours dark; failing the second, he knows no eager, vivid living; failing the last, he has lost much of that simplicity of soul that makes him truly man.

Since man has sprung from the earth, since there are a thousand unseen but unbreakable ties of his nature with the Nature which gave him birth, he dare not get too far from the soil from which he came. Not as a temporary escape from reality, but for finding one of the true realities of life, and for the truest sanity of his soul, a modern man must at not too infrequent intervals turn from his strenuous, mechanized activities and renew his kinship with the elemental simplicities of earth and water and sky. City civilization may be all right, can at least be made all right, but cities as they now exist are far from wholesome; and those who live in them by choice or perforce will, if they would keep clear sanity, leave them at times for saving breathing spells.

Particularly in these times when every sensitive mind is tortured by the appalling weight of pain in the world, and when all of us who care are working at top pitch, this companionship with the wild creatures who know nothing of worry and little of fear is an essential ingredient in our mental calm. I know out of experience what this can mean. The common conception of a minister as a man who labors for an hour on Sunday morning and then has the rest of the week to think about that short working day is somewhat erroneous. We find enough to occupy us every day. Sunday is indeed for most of us a day of special strain, and some way to loosen that tension must be found on Monday.

Some ministers can and do find it in a meeting of their fellow-professionals; but not for me. I am interested in people, but I do not want to see people on Monday morning. I want to see wood ducks and pileated woodpeckers and white-throated sparrows. I want to watch a pair of wrens whose only concern is to find food enough for seven or eight greedy youngsters; or to hide where I can look at my woodchuck when he comes out to forage; or to take a Christmas census.

Also, I want to walk through the fragrant beds of cinnamon fern on Apple Orchid Mountain in May, or listen to the veeries on Rocky Knob in June, or count the pintails and mallards at the Big Spring in October, or follow the tracks of the field mice across the snow on my meadow in December. After such hours as these I can come back, glad to see people again, a little more able to help other strugglers with their strains and sorrows, ready for the work that properly fills most of life but that should never crowd the mind and heart to suffocation.



CAMP PICKETT, VA. "By the dawn's early light" soldiers of the Medical Replacement Training Center start out on a routine training hike through the woods near this Army cantonment.

Photograph by Medical Public Relations, Camp Pickett, Va.

BIRD-MEN IN KHAKI

This Army of ours is training men to love the out-of-doors

By Private Louis C. Fink

THERE has been much—perhaps too much—talk of gloom in ornithology, engendered by the disruptions which war has caused in our national life. A campaign was necessary to save the breeding grounds of the white pelican from the testing grounds of America's big guns. To accommodate war workers, open season on ducks has been lengthened to seventy days, and whether more or less of the migrants will be killed remains to be determined. In the darkness of war, the small birds in our binoculars have vanished from sight. On the coast of Maine, where the Audubon Society's Hog Island ought to be a perfect sanctuary for the most easily frightened of our avian population, it is reported at times that airplanes making survey flights send the birds careening earthward, to hide until the huge shadow has gone from the sky.

The hundreds of amateur bird-watching societies are having their troubles, too. Binoculars—rightly enough—are taboo on either coast; the reservoirs in the East which always yielded golden-eyes and pintails in season are now "off limits"; and the male ranks of bird students are decimated as the men go hiking in khaki instead of civilian clothes. Witness the poor Urner Ornithological Club in Newark, a large proportion of whose membership is now serving our country in camps throughout the United States.

And even here at Camp Pickett, ornithology is no longer easy. A lake

within the camp's limits reportedly harbors an egret colony, and is not too far a hike from this writer's barrack. But the papers now carry pictures of the lake which show pontoon bridges being erected and troops practicing at "invasion" of enemy country on the opposite shores.

It is only right that our natural resources should be used as a proving-ground for the equipment of the armed forces, for wars are fought and won in the open country. The alarmists, unfortunately, see only despair in the situation, and overlook completely the offsetting advantages which the army contributes to the field of nature study. It is the purpose of these lines to point out the ray of hope, the silver lining, which is a real and tangible feature of the military training program now under way.

First, and most important, this army of ours is training men to love the out-of-doors. Millions of city-dwellers for the first time are living under canvas and spending their waking hours in the open, in fair and rainy weather. Best of all, they are finding it fun, learning that out-door life can be comfortable and safe.

Hiking every day on longer or shorter marches, men who may not have walked before are learning that hiking is pleasant. Even with forty-five pounds of equipment on their backs and a rifle on one shoulder, they are finding to their surprise that walking along forest paths is a soul-

and body-satisfying experience; particularly after the feet and back have become toughened to the exercise.

There is even a little forestry taught these new soldiers. Bivouac areas have to be cleaned, and men who in other days would have chopped down every living tree, now are taught carefully to clean out the brush alone and leave the tall, healthy trees standing. Ironically enough, the army is not primarily interested in tree selection; what it wants is camouflage overhead and plenty of room for shelter tents on the forest floor beneath. It is true, perhaps, that foresters and ornithologists won't find this immaculate forest perfect, but at least trails are being opened, firebreaks are being built, and if too much brush is re-



AUTHOR FINK, now an Officer Candidate at Carlisle Barracks, Pa., sent us this brief autobiographical note "between a day of classes and an evening of scrubbing floors and polishing brass buttons. . . . Born in St. Louis in 1910; came East at age of two; lived peacefully in New Jersey until April 8, 1942, when the Army asked for my services. . . . Principal credit for any ornithological knowledge reverts to Floyd Wolfarth, who patiently took me on many a bird-walk. I have a little cabin in the Ramapos where I hope the tree sparrows will still be feeding and the pileated still rapping when this War is over!"

moved in the process—well, it is in relatively small patches which won't upset any ecological balances.

And you cannot take a thousand healthy men into the woods without warning them of the danger of fire. The army teaches the most thorough method yet devised for disposing of cigarettes. When they get through, not a trace remains—of either spark, paper or tobacco. These men—returning home—will never again throw lighted cigarettes from car windows, to cause the countless fires that have been our curse each year.

It would be wrong to think that ornithology is being left behind in all this mass taking to the woods. Over at Camp Lee, while in basic training, there were three of us embryonic gun-wielders who used to march side by side on our training hikes. When the blessed command of "Route Step" was given, and we were allowed to talk, the three of us started pointing out the floating vultures—were they Turkey or Black? A mourning dove would draw a pointed finger; the towhee's song called forth a description before we had seen the bird. To say that our city-dwelling fellows were amazed is putting it mildly. On a night march, just as the sun was sinking, a noisy whip-poor-will began his call—repeated regularly and quite without interruption. We amateur ornithologists kept quiet, and the men finally made their concerted guess: it was an officer's signal for a mock gas attack. The gas never came, and we had an hour's work to convince one and all that the sound was really made by a bird, a bird who liked to be out at night.

Every morning during our eight weeks of basic training, a great blue heron rumbled overhead just as the bugles sounded at Reveille. The heron was every bit as regular as the

bugler, and it was not many days before every trainee learned to look for him, turning their eyes just enough out of the horizontal to stay within regulations for attention. The bird symbolized the start of the day, but his matutinal flight was undoubtedly *after* breakfast, on his way home from the lake.

At Camp Lee and at Pickett, the mockingbirds were residents as faithful as the dogs which follow every army camp. At night, the insect-like hummingbirds darted into the trees, and more than one recruit was heard to ask the name of the big bug with the rose and gold throat. The yellowthroat's call attracted attention, and the noisy vireos and ovenbirds were always a source of questions.

The training period was not half over before it was discovered that a few of us knew these bird-calls, and when the writer was able to identify a tiny phoebe dropped from its nest, the interest began to develop. At first, the scorners appeared and all our efforts at field identification were laughed at. But gradually, when we left after the evening meal for a bird walk, one or two soldiers asked to go along. It wasn't long before a small group interested in nature study had been formed. Most miraculous of all, these men were willing to go on walks a few hours after finishing an army march with full field equipment.

Can you see what all this adds up to? Here are thousands—millions of men—many of them being introduced to the outdoors for the first time; all of them receiving some training in living in the open. Here is a leaven of nature students, amateur and professional, drafted along with the rest and sprinkled among them in army camps at home and abroad. Consider the cumulative effect if all the National Audubon Society members, all

the state society members, all the nature teachers from schools and youth organizations, would quietly spread the word of ornithology, ecology and a few more "ologies" to their buddies. The interest is there, latent, dormant, waiting to be developed. Here is a great reservoir of nature enthusiasts waiting to be tapped, so that the full flow may come after the war. Then picture those same millions, knowing how to live under canvas and liking the woods, returning to their homes. Who can say how great a percentage of them would take up the work, join or organize nature groups, or go off to study further alone? Instead of the war killing bird-study, it would become the greatest boon that friendly science has had since Audubon made his life-size plates.

All it requires is that each soldier who knows nature—a little or a lot, so long as he loves it—spread the gospel subtly and quietly for the "duration and six months." Most of all it requires that he make sure the hardships of army life do not stifle his interest, and that somehow, when the day's work is done, he finds recreation in the woods as before. And that he take a recruit or two along with him. Proselytizing then would be easy.

As our group of new recruits left Fort Dix one morning in April, on our way to a replacement training center, a flock of Canada geese headed northward on their annual visit, flying in perfect "V" formation. "Look at the ducks," somebody said. "That's V for Victory, all right, and I guess they mean us." Quietly, one of us told him they were not ducks, but geese; just as quietly we realized that there was great hope for nature, ready to make of this war not only a victory for America, but a resounding triumph for nature study as well.

A Musical Approach ♯ ♯ ♯ ♯ to Bird Songs

By Charles Albert Harwell

FOR many years I have been working on bird songs and have evolved a scheme for recording them in my mind and in my notebook. I have demonstrated this method before many audiences across the country and now for the first time I would like to try it on a reading audience. My approach is that of a musician who has developed his whistle to cover high and low notes and to do a con-

siderable number of tricks, and who has trained his ear to recognize pitches of high and low frequencies and his mind to remember tone and pattern. In plain language I am a bird imitator and enjoy being one very much.

It might have been well to have



titled this article *Recipes for Bird Imitating*, because that is exactly the scheme of my notebook recordings. When I hear a bird singing I try to put myself in the spirit of the bird just as I would with any other per-

set it down on paper for later reference and for later recollection?



former whose music I wanted to enjoy and remember. I sing along. All the while I may be analyzing the song and taking mental or paper notes. What is the pitch and the range? Is there a set pattern? How long is the song or the phrase? What about emphasis, accent, rhythm and quality? By what mechanics can I produce at least a reasonable facsimile of the song? And by what mechanics can I

Pitch is of first importance and yet it is difficult to convey in writing. Most authorities avoid it entirely. We know some birds sing high and some sing low but we have never reached a common denominator. I use seven birds as my standards for the comparison of one bird's pitch to that of another. They are fairly evenly spaced in the singing range of all the birds combined, which for practical purposes is under seven octaves. My seven pitch indicators are heron, grouse, horned owl, dove, saw-whet owl, flicker, and chickadee. Let me locate their singing levels as related to the piano key board, and since middle C is easily located, I start with the bird I associate with that pitch level—the

NEXT SPRING YOU CAN HEAR BIRDS SING,
BUT DURING THE WINTER YOU CAN ANALYZE
AND MEMORIZE THEIR BASIC SONG PATTERNS

horned owl, patterns given below.

Horned Owl

I spent the night of November 2, 1939, at Springfield, Vermont. At 2:50 a.m. I was awakened by two great horned owls singing just outside my window. I got out of bed, turned on the light, located my tuning fork, notebook and pencil and went to work. I wrote: "Male and female great horned owl singing, the male on E above middle C, and the female on F-sharp above middle C. His song is the standard five-note pattern. This is perhaps an immature female as she gives only six notes consistently instead of the eight expected in each song. Each sings from six to ten songs per minute. Seldom are both in song at the same time. At 3:10 a.m. they moved so far away that I could barely hear them." I quickly drew sets of lines and pictured these songs:



Please do not be too worried over my seeming attempt to assign definite pitch and time values to these pictures of owl songs or to any others that follow, for I do it with my tongue in my cheek. They are but pictures capable of interpretation. My tuning fork is 440 A, yours may be

435 A, the owl carries none. No piano E or F-sharp can be made mathematically accurate by the piano tuner, no matter whether he starts with his A above middle C vibrating perfectly at 440 per second, or at 435 per second depending on whether he is working in concert pitch or international low pitch. He must follow a tuning formula which allows for a certain number of beats off tone for each of the half steps in the normal octave. Most pianos have the bad habit of not staying in tune, and so have we. At that time, the Vermont owls were singing on E and F-sharp as nearly as the orchard-run of pianos or of human voices sing these notes, which is all I intend to indicate.

In similar manner I have made memory and paper pictures of songs of at least one hundred horned owls and offer the following generalities.

The standard pattern of male song is five notes, though some birds seem to swallow the second note, giving the effect of four. Some males slur the last three notes slightly downward. The pitch of the male song is most often on middle C or close to it. The highest I have recorded was F above middle C. The standard pattern of female song seems to me to be eight notes, most often on G above middle C, or close to it, as given below:



The lowest pitch of a female song I have recorded was F-sharp and the highest was A above middle C.

I have heard horned owls in song at all seasons of the year. They some-

times sing in daytime if the day or their location is dark. During late summer and fall months, the young of the year are learning to sing, and many odd patterns are to be expected. The youngsters are right in pitch, but weak in rhythm and seemingly unable to count out the full quota of five or eight notes they should eventually master.

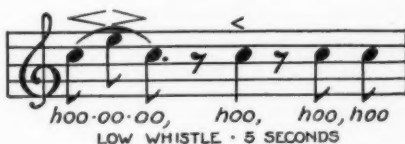
Here is an exception to the general rule that the smaller the bird the higher the pitch of the song. Female owls are larger than male owls, and yet in horned owls as well as in several other species of owls so far checked the female sings higher than the male. Considerable objective proof of this has been gathered the last few years.

The mechanics of imitating this song are simple. Open your mouth and throat wide, round out the lips, and sing the words on the pitch and in the rhythm indicated. Note where the accent falls. The quality is deeply resonant, and fairly sweet. Take this recipe to the next horned owl you hear singing and be checked in your performance by an authority. Above all start listening for those antiphonal songs from this bass section of Nature's night choir. Know by pattern and pitch when a male is talking to a female or when he is calling to another male or to one or more of the young. If you can get in tune and sing along with horned owls and enjoy it, you are well on your way to a real appreciation of wild music. But not until you get a response from this owl or from some other bird coming closer to check on you will you know that you have mastered the song.

Mourning Dove

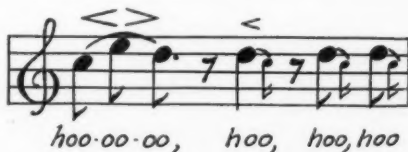
I have scored the songs of mourning doves in Virginia, Arkansas,

Texas, California and other states, and everywhere there is what I call the standard song pattern for the species. By standard I mean what I have most often heard, and what I have come to expect. Some call it the average song of the species. Placing it on the musical staff:



It will be noticed I place the start of this song one octave above middle C, so the mourning dove sings normally just one octave higher than the horned owl male. This brings the dove into the range of the whistle, which in my case starts at G above middle C. A child's voice fits this song very well, too. In the singing of a thousand mourning doves there will be little variation from this basic pattern. Most noticeable will be the differences in pitch. Some birds simply sing higher or lower than others. I have heard songs start as low as A and as high as E. I have heard songs in which the opening slurred phrase is carried higher than to the third above the starting level of the song, and often this slur does not drop back down to the starting level. In a number of cases two or all three of the last notes of the song are slurred downward a half step or a bit more.

Last July at Dallas, Texas, I took notes on the singing of two doves and here are the recorded variations:

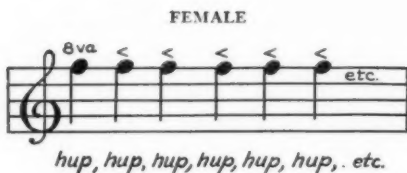




The mechanics of the song depend simply on the ability to whistle as low as the dove. Usually the dove is described as cooing, but the consonant "c" produces too harsh an effect when whistled. So in my recipe the dove is *hoing*, not *cooing*.

Saw-whet Owl

The saw-whet owl is far more widely distributed than it is known. It is not recognized because it sings at night, and the song has not been adequately described. Someone thought it sounded like the noise made when a large-toothed saw was being filed, and this word description has been quoted over and over to our confusion. It slanders the bird. Roger Tory Peterson in his "Field Guide to Western Birds" gives an excellent description of the song, calling it "a mellow whistled note repeated mechanically in endless succession, often between one hundred and one hundred thirty times per minute, *too, too, too, too, too, too, etc.*" I took Roger and Mildred Peterson out owling in Yosemite Valley the night of May 17, 1940, and take some credit for bringing the performer and the careful recorder together down under the Cathedral Spires. The only essential lacking in Roger Peterson's description is pitch, and here that is:



In the mechanics of this song the whistled syllable *hup* does very well. The "hu" produces the mellow quality while the "p" closes each note abruptly by closing the lips, thus producing a bell-like quality to the tone, and the ring of it can be heard a half mile. Also it gives time to take a breath between notes now and then without pausing the rhythm. The rhythm fits the march tempo of our army. Until recently one hundred and twenty steps per minute was the regulation. Now it is stepped up to one hundred and twenty-eight per minute. Some saw-whets still stick to the one hundred and twenty cadence (or slower) while others come close to the regulation beat. Some even go out ahead, and can keep the step for long marches. One owl of my acquaintance averaged more than one hundred notes per minute for seven hours on two successive nights. He had called out enough steps to carry a soldier twenty miles per night.

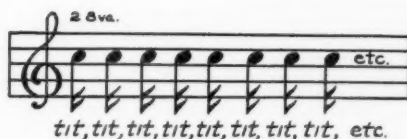
The pitch of the male song is essentially an octave above mourning dove, as the 8va indicates. It may be of help in placing the note to know that this is the high C of the soprano voice. And the F of the female owl is the highest recorded note of the coloratura voice. Of course there are variations, but this C, two octaves above middle C, or the D just above it, will take care of all the male saw-whets I have heard really singing. At times when a bird has stopped for a few minutes and comes back into song there will be a series of some eight or so rapidly ut-

tered notes as though an effort were being made to make up for the time lost. This series usually starts a third below the song level, and often the mark is over-shot a half step, but the normal level and rhythm are soon reached. The female sings higher than the male, all my records being on or near F as indicated above.

I have heard short sketches of song from saw-whet owls during fall months, and once in February, but the real singing period seems to be in spring and early summer. June 17, 1941, while watching a northern lights display, I heard the constant *hup, hup, hup*, of a saw-whet singing on D from the mainland just opposite the Audubon Nature Camp in Maine. As usual I chimed in and soon a second bird joined us to make it a trio on D. The second bird was on Hog Island, and so was established the record of saw-whet owl on the growing life list of birds found at Camp. On subsequent nights a number of the campers were successful in observing this tame little owl with their flash-lights by following the sound to the bird. In California we cannot do quite so well, for our trees are taller.

Flicker

The flicker sings roughly an octave above the saw-whet owl, and in order to work out the range-finding scheme I am building, I treat it next. His spring song consists of a series of from fifteen to eighty notes usually uttered so fast that they have to be counted by fives. There is a chordlike quality to the voice evidently caused by overtones, or the ability of the flicker to produce two or more tones simultaneously, or his inability to sing on just one tone. But fundamentally the song can be represented on the staff as follows:



The syllable *tit* is much better than the usually written *wick* for this song, as will be discovered when you try to whistle it using either of these syllables and maintaining the fast pace of eight per second. With practice you will notice that you, too, can produce double or triple tones, especially if you give the song in stage whisper as the flicker seems often to do. He is a master in double-talk.

Of course there are variations in pitch. I have heard them as high as E and as low as A and on all shades between. Often there is a rise in pitch at the beginning of the song, and a slight lowering at the end of the series, as though the bird were running down. In fact I marvel at the breath control of this woodpecker. Does he produce sound on both the exhaled and inhaled breath, or does he breathe between notes?

From the song level of flicker, upward an octave to the highest C on the piano, plus a few notes beyond, lies the principal singing range of our North American families of song birds. Here sing the creepers, dip-pers, wrens and warblers. Here sing the *Paridae*, *Mimidae*, *Turdidae*, *Syl-vidae* and *Fringillidae*. Here sing the flycatchers, waxwings, meadowlarks, orioles and tanagers. I am aware that some of these birds, notably the flycatchers, are usually classed by ornithologists as songless, for they use such words as call, voice, sound or note to describe their utterances.

I hold simply that whatever a bird gives forth as his best effort and whatever satisfies for his kind the purposes of song in a thrush, is his song. Every

time I hear an audience poorly led through *The Star Spangled Banner* I become the more convinced that a grouse can sing. I know a man who shot mockingbirds because their noise kept him awake nights. Recently there have been quite a few columns of newspaper space given to a popular discussion of the merits of robin song. I was surprised to learn how many considered it monotonous.

In our orchestras there are some instruments which, when sounded by themselves, could scarcely be classed as musical, yet they round out a symphony. So in the orchestra of Nature not every instrument can be a first violin, a flute or a cello. There must be drums, basses and penny-whistles. I am content to let them all make music and to train my ear to distinguish the different artists as they do solo parts or join the ensemble.

Chickadee

Most of my observations on the music of the chickadee have been made in the Sierra Nevada of California where the mountain chickadee is a favorite. His song is one of the purest in simplicity and tone. Four, or three, sweetly whistled notes are enough to make a song according to the chickadee, provided they are correctly put together, and here is his recipe:



The usual interval is a minor third and the song most often starts on the highest C of the piano, which is the

highest C of the human whistle, and reached by but few. For all practical purposes it is the highest C of the bird whistle as well. I have heard a chickadee start his song as low as A. There are variations in pattern and in the interval but I feel sure that what I have pictured may be considered the standard song.

The black-capped chickadee is so often described as saying *fee-bee*, with a one-step drop between the two notes of the song that it seems almost wrong for a Californian to make any comments. Yet I have heard quite a number of them in song and the pattern has seemed to me distinctly built of three notes. I have often heard the song start as high as C and with the interval of a minor third occurring now and then. I would like to suggest a pleasant experiment.

Considerably reduce the speed of your phonograph, then play record 2B of the series of *American Bird Songs* recorded by the Albert R. Brand Bird Song Foundation. Chickadee is the first bird on this record. Reduced speed does not distort the song except to lower the pitch and lengthen the notes and pauses. Now you will clearly distinguish that all the seven chickadee songs given are really made up of four notes, in very much the same rhythm and pattern I have pictured for the mountain chickadee. Let the record play on and you will gain a new impression of the sweetness and variation of the phoebe's song, and the intricacies of vireo patterns. Turn to thrush recordings and enjoy the flutelike quality emphasized by this reduced speed. I was introduced to this idea at Cornell University three years ago where Dr. Paul Kellogg and Charles Brand ran several reels of original sound film for me at the laboratory. Here the speed could be mathematically con-

trolled. By cutting it in half the song levels were reduced one octave, and song patterns were shown in much clearer detail.

I have chosen to describe the songs of five birds whose voices are roughly an octave apart when considered in the order I have given them. The musical notations show that the chickadee sings an octave above the flicker, two octaves above the saw-whet owl, three octaves above the mourning dove, and four octaves above the horned owl. There are bird voices higher than the chickadee and bird voices lower than the horned owl. Two of these lower ones I would like to present.

Grouse

June first, 1940, Guy Emerson and I watched a sooty grouse singing in the Mariposa Grove of Yosemite National Park. The bird walked back and forth on a horizontal limb of a large Jeffrey pine, keeping his tail always up at the strut angle. When his turn came to reply to the two or three males he was challenging, he would stand still, inflate his orange-colored throat pouches, thrust his head far back, then suddenly bury his bill in his breast feathers and give forth his wild music. We were as much interested in his physical exertions as in his song. Like the rooster and gobbler he not only put his whole soul into it, but his whole being as well! With each utterance his spread tail was depressed an inch or two, giving us a metronomic index to the rhythm and the number of notes in each series. He deflated his glandular air sacs just at the close of each song, took up his march, and seemingly listened for any effects his reverberations had produced on his neighbors. Why didn't they melt into submission and yield him the mountainside? He seemed so powerful and

insistent. But no, they were stubborn or whatever, and talked right back. So, at least every half-minute, our Sierra grouse was put to the necessity of restating his position.

I am not sure what he said, nor whether I could put it in print if I knew, but here is my picture of the way he said it:



In this song, as in the hundreds of others I have heard, the usual number of notes was seven. At times there were six, and often a quick grace note was thrown in just before the third or fourth note, bringing the count to a possible eight. To produce the hollow booming effect I half inflate my lungs, open my mouth and throat wide to increase resonance, keep my lips closed, and say *um ph* in the rhythm and on the pitch given. There is some variation as in all bird music. The song may be as high as E, there may be a drop in pitch at the close of the series, and there may be a considerable change in the rhythm.

One early morning I broke in on a family breakfast party at my camp at Glacier Point. The female and several of the young were on the table picking up bread crumbs, the male was on the ground with the rest of the brood doing the same. Perhaps I looked strange coming from the tent in pajamas and his normal response mechanism was thrown out of gear, or perhaps he was unusually pugnacious. Anyway he at once decided what to do about it. He came at me fighting. With spread tail, inflated pouches, and wings held so low that the tips of the primaries dragged the ground, he came

on *umpling* his frightening battle cry. The last two feet he ran and threw himself at my shins. He jumped as high as my knees and on the way down dragged his claws against me. He repeated this three or four times. Neither one of us was hurt but he won the battle easily. While I was concentrating on him and his furious performance, the hen called the chicks to cover and safety. His purpose achieved, he quit the field on the wing. I had learned that a grouse might sing on the ground, and that there are mad songs as well as love songs in nature.

Great Blue Heron

On September 11, 1939, I sat with a group of students at a bend of the Merced River in Yosemite Valley watching a great blue heron fishing in a shallow pool opposite us. The bird was unusually talkative for his kind and my audience and I enjoyed my efforts to talk back and forth with it. Suddenly the heron stood erect and looked skyward. We glanced up to learn what had caused the alarm and saw a golden eagle gliding silently across the valley. The heron "pointed" the possible danger until the eagle disappeared at the base of El Capitan. Then it relaxed, and with several low chuckles of satisfaction went on with the profitable business of frog catching.

To our surprise and delight the heron soon picked up and flew to a snag in the middle of the river not more than forty feet from us and started preening. Here was a grand opportunity to take the measure of this bird's voice. My group agreed with me that the heron and I sounded most alike when I said *walk* in my lowest voice range. This bird seemed to have no sense of rhythm. An attempt to put what I heard on the staff would look like this:



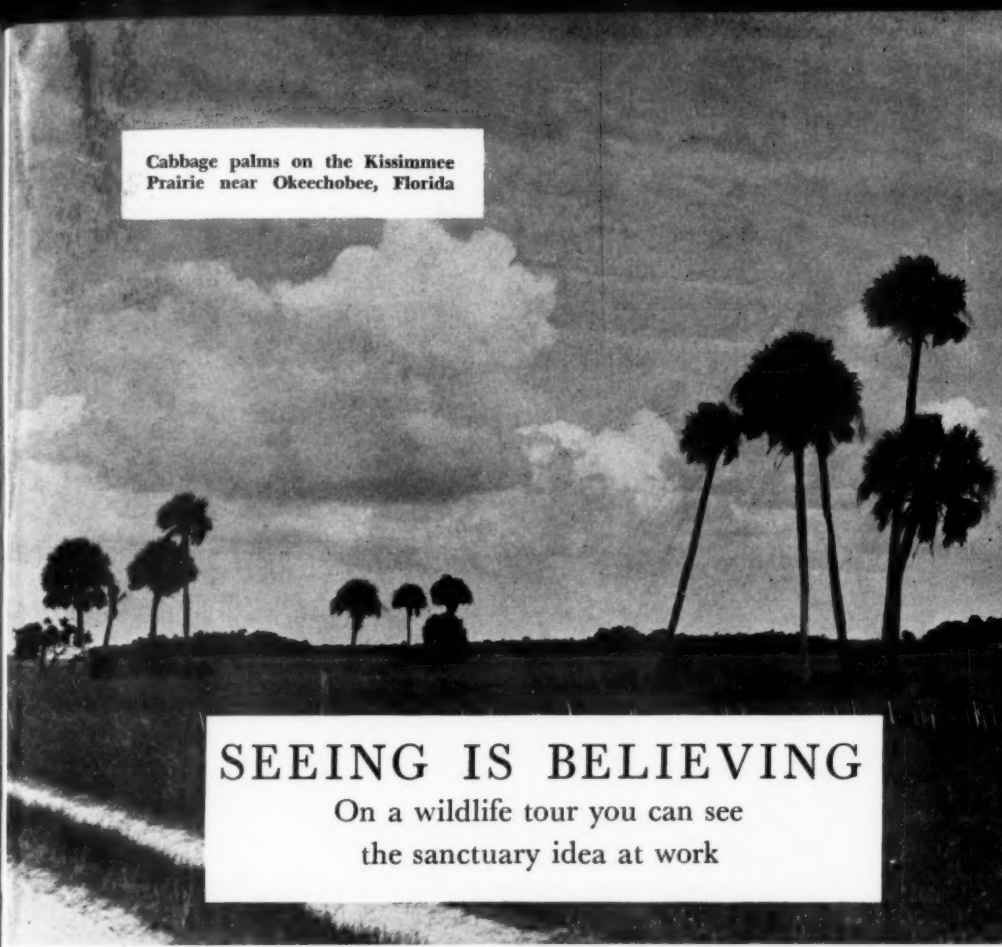
This is the lowest note I have heard from any bird or from any other animal except man. The fact that it is six octaves below the chickadee shows the great range of bird voices. Birds can make music as low as we can, and at least two octaves higher than the human voice can reach. Knowing this should heighten our appreciation of bird songs. It should increase our listening pleasure.

Birds of the Seven C's

I have found these *Birds of the Seven C's* of considerable help in fixing the pitch and range of any other bird voice heard. It is a simple matter to note that the burrowing owl sings at the level of the male saw-whet owl; that the road-runner sings in the mourning dove's range; that the Townsend's solitaire gives a call note on F above flicker C and weaves his whole symphony close around this note, and that the pileated woodpecker most often starts his song on B just below flicker C and levels off on the D just above. But more of this will appear in my next article describing bird song patterns to be printed in Audubon Magazine in the spring.

... can spring be far behind?

Winter is an excellent time to start learning bird songs. There aren't many singing so the problem is simplified. Master the stay-at-homes and the several winter visitors in your area and be ready to learn the songs of the on-coming spring migrants one by one against this known background. Then you will be more fully able to enjoy the grand crescendo of singing nature. You will feel adjusted to it.



Cabbage palms on the Kissimmee
Prairie near Okeechobee, Florida

SEEING IS BELIEVING

On a wildlife tour you can see
the sanctuary idea at work

By Alexander Sprunt, Jr.

Photographs by Allan D. Cruickshank

ONE afternoon in March 1939, I drove up to the Southland Hotel in Okeechobee, Florida. I had no reason to expect that this day would be one to be long remembered, for it was my custom to visit this town once a month in my round of inspection of southern sanctuaries maintained by the National Audubon Society. But something out of the ordinary was in the air. When the porter came to take my bags from the car, he seemed unusually gratified to see me.

"We'se always glad tuh see you suh,

but we never was gladder dan right now."

As we entered the lobby, I felt the atmosphere of the room alive with suspense. At this hour of the day, the place was usually deserted, but not this time. At least fifteen men and women were sitting there, looking as if they expected something to happen.

When I reached the desk, the clerk greeted me effusively. "Ha," he exclaimed loudly so that everyone could hear him, "here's Mr. Sprunt now!" Whereupon everybody jumped up



Snow geese breed in the Arctic but provide a thrill for winter bird-watchers in California's Sacramento Valley which is one of the greatest concentration areas in the United States for these birds.

and thronged around me, asking questions thick and fast. "Are you Mr. Sprunt?" "How will we get out to the sanctuary?" "Will you take us?" "Will we really see glossy ibis?"

Immediately, I made the necessary arrangements to take the group to the Lake Okeechobee-Kissimmee Prairie sanctuary area, and right then and there, the National Audubon Society

held its first wildlife tour—however spontaneous, unplanned and unofficial!

Report of this incident gave the signal for launching the Society's educational tour program, which had for some time been under consideration at headquarters. It had been recognized how great would be the conservation influence of such tours upon

the people living in the areas visited. More often than not, these were regions in which the only conception of wildlife was as targets, food or pests. A big job was, and still is, to be done. The time had arrived when a sufficient volume of wildlife tourists was in prospect to warrant tour promotion on a break-even basis. The former system of granting permits to individuals wishing to visit Audubon sanctuary areas was now to be supplemented in favored locations with a new plan, involving schedule of definite dates for parties of limited size conducted by a special guide and provided with adequate transportation, which is usually by station-wagon.

Our first official schedule of wildlife tours was announced for February

and March, 1940—a series of two-day trips through the Lake Okeechobee-Kissimmee Prairie region. The success of this venture prompted the second series which took place at Cobb Island, Virginia, in May and June of the same year. In 1941, tours in four more localities were conducted: in the Sacramento Valley and in the Palm Springs-Salton Sea region in California under the leadership of Bert Harwell, our California representative; in the Corpus Christi-Tivoli region in Texas; and at Bull's Island, just outside Charleston, South Carolina. Five hundred and sixty people from thirty-four states and five foreign countries attended the various tours which I conducted in the eastern localities during the year.

Bert Harwell, our California representative, conducts tours to the Sacramento National Wildlife Refuge near Willows, and to the Gray Lodge Refuge near Marysville, where thousands of white pelicans, egrets, sandhill cranes, whistling swans, snow geese and many other birds transform the Sacramento Valley into a paradise for bird-lovers.





Cabbage palms, moss-draped oaks, pines and marsh grasses are part of the web of life at Bull's Island, South Carolina, where you will see not only an abundance of waterfowl, but deer and 'coons, and occasionally an alligator or an otter.

What of the people who have made these tours a success? Who are they and why do they come?

Perhaps you might have guessed, as did I, that they would be experienced bird people; accomplished observers who wanted to seek out new birds in new localities; ornithologists who wanted to see caracaras, limpkins, cranes and kites. Welcome as such

people would have been, they were present in few numbers. The great majority of visitors were new to the art of bird-watching; it is in this very fact that so much of promise lies. They were people who had little or no previous ornithological experience; they were not particularly interested in rare species, but were eager to see any and all birds. To them, a



The wild ringing call of the greater yellow-legs can be heard from almost every mud flat.



Hooded mergansers come from as far north as Manitoba, Canada, to spend the winter at Bull's Island. Flocks of wood-ducks gather here in company with egrets and wood ibis. Bald eagles, wild turkey and pileated woodpeckers nest on the Island.

mockingbird or boat-tailed grackle was as thrilling as a glossy ibis or Everglade kite! They were hungry for knowledge, they were eager to be introduced to the world of nature, to see her in all her beauty, but also, to understand her. These visitors came from many walks of life, representing varied callings and vocations: clergymen, bankers, teachers, lawyers, writers, magazine editors, business men, college professors and sportsmen.

They were generally amazed at what

they were able to see, they marveled that egrets and bitterns could be seen in roadside ditches, some of them were astonished to find that such birds even existed! They stared enthralled at cowboys and Brahma cattle, at cabbage palms and hibiscus; at the carpet of wild flowers on the limitless prairies, at turtles, snakes, alligators and Indians.

Some of them wondered that there were ducks other than mallards; each one saw something new and strange

to his experience; each one learned of the interdependence of one form of life on another and how it all affects humanity, themselves included. Many of them never before realized that bird-life affects them individually, that it is an economic asset without which the world would be in evil case. They saw conservation applied in the field, they saw the effects of patrol on the tameness of wild birds, they saw wardens at work and drank coffee made at wardens' campfires and heard stories from these hardy men who stand in the front-line trenches of conservation's battle-line. They saw the sanctuary idea working and many of them understood as never before how their contributions to the cause were being used. They could see the need for united effort and organized work. They realized the vast scope of educational and protective endeavor which faces those engaged in promoting conservation. Those who were not members of any wildlife protective organization wanted to know how to join, and what they could do to make their new knowledge and understanding effective.

Bird protection was, of course, the principal drawing card. It is what they saw at first hand. It was living, visible proof that bird protection works, and pays high dividends, another vindication of the old adage that "nothing succeeds like success." They saw success in operation and they wanted to have a hand in it. Is not this a field of promise?

In view of the inexperience of many visitors, there are always many questions asked, some of them very amusing to the seasoned ornithologist. Why do yellowlegs bob up and down? Why do caracaras walk so queerly? How do the old eagles employ their time after they have taught the young to fly? Will we hear a turkey vulture

gobble? At what stage of growth is it that a little blue heron becomes a great blue? One witty young woman, thoroughly amused and unembarrassed by her ignorance of birds, entertained us by composing a limerick:

There was a young fellow named
Sprunt,
Who always sat up in front,
He taught herons and cranes
To folks without brains,
And that was, believe me, some stunt.

Although the continued growth of the wildlife tours may be temporarily delayed because of war time restrictions on rubber, gasoline and transportation, the importance of this kind of elementary or introductory educational field work has so proved itself that the National Audubon Society will increasingly promote them as circumstances permit. Two-day tours are now current at Bull's Island, South Carolina, being conducted twice weekly (every Monday and Tuesday, and every Friday and Saturday) from November 16th through December 31st. Reservations for these tours, or further information concerning them, may be secured by writing to the headquarters of the National Audubon Society in New York City.

A question that comes to mind is, of course, how worthwhile is this kind of activity during war time? The answer to this depends upon your attitude toward conservation, and understanding of it. At this time, more than ever, it is important that we keep the principles of conservation in mind for in war, as has been said many times, success or failure ultimately rests upon a nation's natural resources. An informed public, one that understands the vital interrelationships of nature, can and will more successfully prosecute the war and safeguard the peace.



The Nature of Things

By

Donald Culross Peattie



THESE are the crisp subtropic winter mornings when I walk a mile before work every morning, down to the post-box at the bottom of my hill to get my mail, and then up at a slow slog, slitting envelopes and reading what's inside. The lizards run ahead of me along the old stone wall, or vanish with a rustle into the leaves, where my dog takes up his stand to bark a safe defiance at these dangerous monsters from which he has so gallantly saved me. I flush quail somewhere along the way on almost every morning, their bobbing head feathers no sillier than most hats, or I hear them calling in the valley below, where rises the smoke of my neighbors' chimneys. The vultures keep an eye on everything, swinging on buoyed and balanced wing over the little town—until planes from the nearby bomber training base sweep the sky clear with a giant roar.

It's a steep pull, up through sun and eucalyptus shade, but by the time I've reached the hilltop, I've filled my lungs and got my morning's mail read too. Few letters bring me more pleasure than the not infrequent ones from men in the service who give me a few minutes of their precious time and talk about serene small nature adventures which they seek in the midst of war or training for war.

"When I'm not on duty on the flying field," writes a man from a Marine Aircraft Wing, "I head for the hills or the ocean. I have just returned from a stroll across the mesa; I found an unexploded shell, brass with a red

tip about eight inches long—a wicked thing. I heard the white-crowned sparrows singing, in a willow clump that's full, morning and evening, of white-crown song. I gauged correctly the progress of a bushtit gang (no, they're too dainty and sweet to be a gang,) a flock, rather, and they passed right through the sumac under which I was seated. I saw quail and meadow-larks, wrentits, brown towhees, horned larks, a Cooper's hawk, a Bewick's wren, and those sparrows with sideburns and a spot on their breasts. (Bell sparrows? Lark sparrows? Without my bird book, I forget easily.)"

That morning, he wrote, there had been a bad crash on the field, and picking up the pieces was his business. I think he will not so easily forget, after all, how the white-crown sang, in the hour of that day which belonged to peace. For to those who listen to them, bird notes are key notes to memory. Heard again years later, they can unlock a whole box of times and places and faces.



Here's another item from the morning mail, written by a lively young lady of seventy-five, who has been watching birds, she says, for half a century:

"You may share my joy," she writes, "in discovering for myself the following birds in the following places: the Hudsonian chickadee that was 'sick-all-day-day' at Digby, Nova Scotia; the great horned owls, at Milford, Nova Scotia, that screwed and unscrewed

their necks to watch us around our campfire, ten miles from human habitation; the black guillemots on the cliffs of Grand Manan, and nesting petrels on an island off shore; Canada jays that sneaked into our tent at Birchy Cove, central Newfoundland, to filch a meal from our haunch of caribou meat; Wilson's snipe and Lincoln's sparrows that nested at Howley, Newfoundland; titlarks that wagged their tails over Gafftopsail, Newfoundland; gannets, razor-billed auks, Brünnich's murrelets at Percé, P. Q., off Gaspé Peninsula; the magpies in England; the white-rumped house martin and the swallow-tailed swallow at Hampton Court; the skylarks that sang over Belleau Wood; the red-breasted finch at Rheims; storks' nests at Basle; the green flycatcher on the plains of Sharon; plovers at Acre; vultures and ibises at Cairo; ravens over the Brook Cherith; crested larks on a trip to Jericho; cardinals, Carolina wren, red-headed woodpecker at Washington, D. C.; a score or more species, new to me, in various parts of Colorado; summer tanagers at Juarez, Mexico; desert black-throated sparrows at El Paso, Texas; lark bunting, white-necked raven in New Mexico; and many other birds in Arizona, California, Oregon, Washington, Vancouver, Glacier, Banff, Assiniboia, North Dakota and Minnesota."

That list, when you think it over, is a sort of biography written in code. Probably you too could write a life-story of your own in the same cipher, and it would be private to you and to whomever else may have heard with you the remembered calls in the far away places. You might try it, one of these well-known long winter evenings, when you haven't gas enough to get to the movies, and you can't get Dinah Shore or Toscanini on your radio.



The friends of the American wilderness insist that it is fast vanishing. Their opponents have been known to claim that, under the excuse of preserving wilderness areas, the federal government is locking up needed raw materials, thereby impoverishing many regions while at the same time consolidating bureaucratic despotism.

So it occurred to me to try to find out how much land classifiable as wilderness is actually in the hands of the federal government. With the assistance of Mr. Robert Sterling Yard of the Wilderness Society, I was able to assemble the exact figures from official sources. I believe these collective facts have not been published.

The Forest Service states that there are about 21,281 square miles (net) of national forest land set aside as wilderness and roadless areas.

The Indian reservations boast 545 square miles of roadless or wild areas.

The national parks possess a net roadless wilderness of 16,863 square miles. To this, add wild or primitive areas from which the acreage of roads penetrating them has been subtracted, and you get a grand total of 23,209 square miles, excluding Alaska.

Add to this the lands held by the Fish and Wildlife Service. On this subject, Mr. A. C. Elmer, Acting Chief of the Division of Wildlife Research, writes me: "Of the national wildlife refuges under our supervision, there is only one that has the semblance of a wilderness area, namely, the Okefenokee National Wildlife Refuge in Georgia." So that adds 511 square miles, and we can say that the amount of wilderness areas in the possession of the chief government agencies comes to roughly 45,546 square miles in the continental United States.

Thus, of the 3,026,789 square miles

comprised in our forty-eight states, less than a fiftieth is wilderness held by these government agencies. This is not two per cent of the total area of the country. One can hardly say, then, that the so-called "wilderness movement" inside the government is an octopus which is getting its tentacles into every vital organ of our economic life and strangling us in bureaucracy.



Just what is "wilderness?" Well, it would be interpreted a little differently in various government departments. On the Indian reservations it would not mean that no hunting is permitted, for Indians (but not whites) may hunt there freely in their own way. A wilderness area in the national parks *may* be penetrated by roads; you are not insured against meeting another tourist. In the national forests not all wilderness areas are game refuges.

But, accepting these modern modifications and realizing that the aboriginal wilderness of the past is now unattainable inside our borders, I would call a region "wilderness" when any considerable tract of land with approximately primeval biologic conditions is set aside by man as exempt, or nearly so, from commercial exploitation. True, there are many parts of the desert, for instance, which are wild and uninhabited, but their status as wilderness is often quite temporary and insecure. You have only to visit Palm Springs, California, to see what was lately an intense desert now rendered positively suburban, verging in spots on an amusement park.

So, true wilderness in the modern sense is a voluntary and deliberate thing. It is conceived and defined and maintained chiefly by the love of a

few. Of enemies it has not a few also.



In the September-October number of this magazine, my gifted colleague Roger Tory Peterson grew, as fiery as his handsome red-bordered cover with the woodpecker on it, over the question, "Can anything be done about the inconsistency in bird names?"

My own answer would be, "Probably not, and why try, anyway?" Because the difference between subspecies is so difficult for the average observer to distinguish in the field that one name will do for the lot, when it comes to some of the sparrows, for instance. You have to shoot and skin some of those discreet, disputed little brown-grey numbers, to see the three white specks under the chin, or whatever marking signifies that it's one or t'other. And by that time the bird is so dead that its Latin name seems the most appropriate tag for it.

The inconsistency in bird names which worries tidy-minded Roger strikes me as part of the rich regional variety of America. What swings in the reeds with a sweet metallic whistle of an April morning in the sloughs, may be a red-wing blackbird where you live, but in Dixie it's a ricebird, if it isn't a "sojer-bird," as I've heard the darkies call it. You may say flicker, or even more elegantly, golden-winged woodpecker, but I come from the Middle West, and it's still a "high-holer" to me. And in New England the white-throat sparrow is a Peabody bird; he'll tell you so himself, as they triumphantly point out. No, the authorized standardization of popular names won't stop people from calling the birds they like by the names they like. Any red-head who was ever called "carrots" and hated it, knows that.



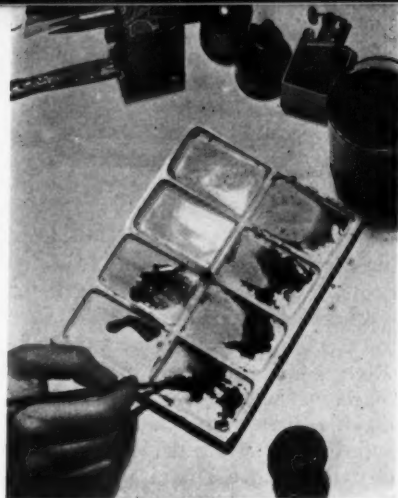
ROGER TORY PETERSON
draws this month's cover as
EDWIN WAY TEALE
focuses his camera to bring
you these unusual pictures

A of our ARTIST AT WORK

ROGER TORY PETERSON—to borrow an expression from the sporting page—is a triple-threat ornithologist. He is an artist, a lecturer, a writer. By his paintings and photographs, by his illustrated lectures, by his pamphlets, articles and books, he broadcasts his enthusiasm for birds.

That enthusiasm has been burning steadily for nearly a quarter of a century. During recent days, while I have been following him about like some photographic Boswell to record on film the successive steps in creating this issue's cover, he has told me of this long fascination and how it began.

Roger Peterson was born in the western New York manufacturing city of Jamestown on August 28, 1908. He was not, he is free to admit, a model little boy. Regimentation rubbed him the wrong way. The do-it-because-you-are-told-to-do-it rules of the Jamestown school system fed his non-conformity. He still holds the dubious distinction of having been spanked oftener in Sixth Grade than any other boy in the history of his school. Seven



times in one term, he trudged down the Via Dolorosa to the principal's office. The bill of particulars against him ranged from dropping a match in the dry grass of a lawn to climbing down the fire escape instead of marching two-by-two along the hall in the prescribed Noah's Ark manner.

In the second half of the Seventh Grade, a sudden change came over him. His science teacher, Miss Hornbeck, organized a Junior Audubon Club and obtained leaflets which turned his attention to nature. It was, a good many people agreed, a great day for Jamestown.

His initial interest in birds can be accounted for best, he believes, by the fact that they were symbols of freedom in his maladjusted youth. They could move about, fly away, escape from restrictions. Beyond the age of eleven, the outdoor world formed the hub about which his life revolved. Although the great dates of history refuse to stick in his mind, he still can recall the exact date of every bird trip he made during the first five or six years of his enthusiasm. He remem-

bers his grandmother's birthday, for example, by recalling that it was on that day of the year that he saw his first cardinal!

In the beginning, he was absorbed in everything pertaining to the out-of-doors. Soon, the carpets in the Peterson home developed bulges and began to crackle when walked upon. Roger was pressing hundreds of plants by placing them between newspapers and tucking them under the carpets. One Saturday, he and a school-companion started off on a botanical "big day." They identified 250 wild plants before they returned home at dusk.

Then Peterson plunged into entomology. He memorized hundreds of scientific names from a price list put out by Ward's Natural Science Establishment. He collected, one summer, 200 swallowtail caterpillars. Supplying their favorite food—pipe-vine leaves—kept him on the run for weeks on end. During the winter he brought home 800 *Promethea* moth cocoons. The vast horde of fluttering insects emerged in the spring and laid their eggs on his mother's curtains. On several nights he became so engrossed in capturing moths about street lamps that he failed to put in an appearance until morning. And, on one occasion, he appeared triumphantly at the kitchen door with two baby skunks he had caught in a butterfly net.

From the time he encountered the first Audubon leaflet, he had been trying to draw. At frequent intervals he used to pull a little express wagon down to the public library and haul home the two big volumes of "The Birds of New York" to study the illustrations by Louis Agassiz Fuertes. His first bird drawing, a colorful side-view of a blue-jay, received the praise of the teacher in school. But, through a mixup, it was credited not to Peterson but to another pupil. A little

later, however, he came into his own. The *Buffalo Times* offered a cash prize for the best drawing sent in by one of its younger readers. The banded purple butterfly Peterson submitted brought him two dollars. His father was dubious about the achievement however. For, in making the drawing on rough paper, Roger had ruined a five-dollar pen to win a two-dollar prize. The pen was his father's.

Throughout high school he took all the art courses offered. Jamestown, because of its extensive furniture factories, is known as the "Grand Rapids of the East." In one of these plants, Peterson obtained work painting designs on cabinets. In this way he earned money for an eventful trip to the A.O.U. convention in New York City in 1925. There the seventeen-year-old boy met men he had been reading about for years: Dr. Arthur A. Allen, Dr. Frank M. Chapman, Dr. Robert Cushman Murphy, Ludlow Griscom. The great Fuertes gave him one of his brushes and offered to make suggestions if he would send him some of his sketches. In one day, on a trip with Ludlow Griscom to Long Beach, L. I., he added thirteen new birds to his life list. He returned home with only eight cents in his pocket but completely happy.

Two years later, he was back in New York, beginning his art career in earnest. Mornings he attended classes at the Art Students' League and afternoons he earned his expenses by painting little Chinamen on lacquered cabinets in a downtown furniture shop. Weekends he roamed the fields and woods with a remarkable and energetic group of young ornithologists known as the Bronx County Bird Club. Out of that small society have come such well-known bird-men as Allan D. Cruickshank, National Audubon Society photographer and lec-

turer, Roger T. Peterson, and Joseph Hickey, of the Wildlife Management department of the University of Wisconsin. During the five years he was at the Art Students' League and the National Academy of Design, Peterson was increasing his knowledge of birds.

During the next three years, while teaching art and science at the Rivers School, at Brookline, Mass., he labored evenings over a new kind of bird guide, a streamlined volume which emphasized the predominant field marks. As "A Field Guide to the Birds" this standard work is familiar to all. More than 40,000 copies are in use. USO army-camp libraries include the volume; every Hudson Bay post carries it in stock; virtually every eastern college that teaches ornithology uses it in the classroom. Seven years after publication, it is selling at the rate of 6,000 copies every twelve months.

Yet Peterson went from publisher to publisher with his manuscript. He was turned down by five leading companies before Houghton Mifflin, of Boston, decided to gamble on the book. It was considered such a risk that the print-order was for only 2,000 copies and the contract stipulated that the author should receive no royalty at all on the first 1,000.

In two weeks, the 2,000 copies were gone. All during the following month of May, orders poured in which could not be filled. Before the year's end, the publishers realized they had one of those rare "bread-and-butter" books that sell year after year without any pushing. Peterson's more recent companion-volume, "A Field Guide to Western Birds," required 20,000 miles of travel and three and a half years of work to complete.


The same year his first guide book appeared, 1934, he joined the administrative staff of the National Audu-

bon Society where he was assigned the task of rewriting the very leaflets which, years before, turned the current of his life into its present channel. In the past several years, Peterson has prepared and illustrated more than a hundred and sixty of these leaflets. They cover more than eighty different species of birds. These interest-stimulators have gone to well over 1,000,000 school children.


In 1936, Peterson married Mildred Warner Washington. They met at the first session of the Audubon Nature Camp, where Roger was head instructor in birds. Among the scientific clubs of which Peterson is a member are the Linnaean Society of New York, the Nuttall Club of Cambridge, Mass., and the American Ornithologists Union. He became an associate member of the latter in 1925 and was elected to full membership in 1935. At the time, he was the youngest man who enjoyed full membership. Other vital statistics include the following:

He has lectured on birds in twenty-two different states. He has drawn more than 700 species of birds. He has photographed 130 species. His life-list now includes between 850 and 900 species and sub-species. He has watched birds in every state in the Union except one—South Dakota. Last summer, he was within fifty miles of this commonwealth but decided to leave it for the future so there still would be "someplace new to go to."

As a bird painter, Peterson has improved steadily so that at the present time he is doing some of his finest work. It is this capacity for methodical growth, for sustained and intense enthusiasm, which is an outstanding characteristic of his. He hasn't stopped growing. And that is what makes his future as full of interesting possibilities as his past is full of interesting accomplishments.



This photographic essay by Edwin Way Teale shows how Roger Peterson makes one of his drawings—in this case the one reproduced on our cover. Sketching the captive snow geese at the water-fowl pond in the Bronx Zoo, Mr. Peterson works rapidly, catching action and gesture in a few simple lines. Details are not bothered with at this early stage. Field sketching is more satisfactory than making up poses and postures out of whole cloth within the studio.



PULLING out the long, flat, camphor-reeking trays at the American Museum of Natural History, Mr. Peterson selects a snow goose or two to work from. They will be used for reference, but cannot be copied literally, for there is nothing dead-looking than a bird skin. Some bird artists collect their own specimens for painting, but in a large city where there is a museum this is seldom necessary. The goose in Mr. Peterson's hand was collected in Wisconsin forty years ago.


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Shaping the idea




ALTHOUGH two snow geese and one blue goose have been decided upon for the drawing, dozen positions have been sketched on the rough paper of the sketch-pad. Like paper dolls, they are cut out, then placed in different combinations until a satisfactory arrangement is arrived at. The other cutouts are filed away for the future. Sometimes the clippings are shuffled around and studied for an hour or more before the basic design is determined. This is really the most creative stage of the drawing. Some artists give too little attention to composition, scattering their figures too much, giving them no relation to one another.

Since it is easier to work in a larger size, the composition is scaled up on a piece of tracing paper by means of squares and transferred to illustration board.

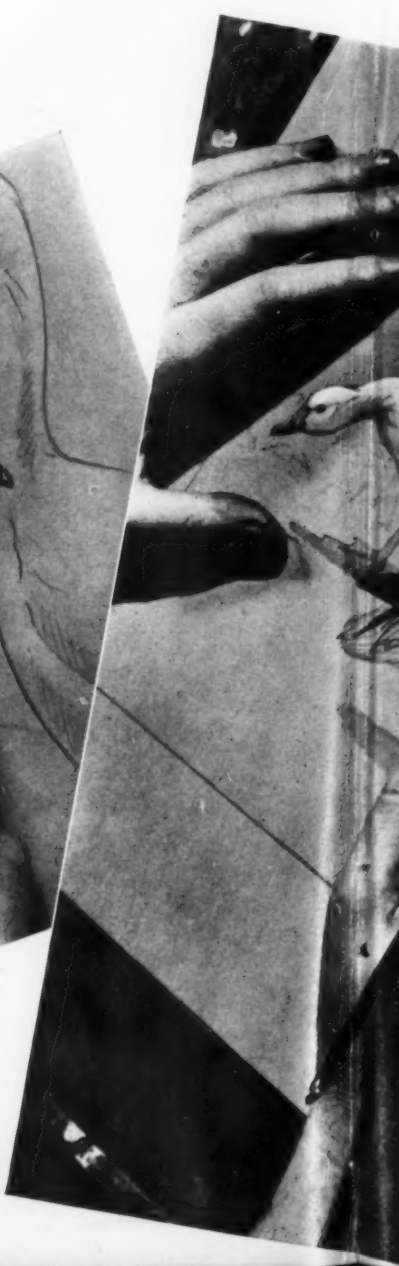


CLUTCHING the blue goose firmly and closely studying its bill structure, our artist perfects the drawing. Faults of draughtsmanship are corrected, details added. Most covers are done at Audubon House, but if time is pressing, Mr. Peterson finishes them at night in his home studio.



*... Adding life
and character*

FOR this work a hard sharp-pointed pencil is used, one that gives definite, crisp details. For the rough-action sketches a softer pencil was employed. A former student of the master teacher, Kimon Nicolaides, Mr. Peterson feels out contours much the way he was taught years ago at the Art Students' League, in N. Y. C.



BEFORE settling down to the serious business of painting, our artist consults his "morgue" in which he keeps a thousand and one odds and ends for reference. Here he is examining a folder marked "marsh vegetation." As there are no marshes on Fifth Avenue, these files are a valuable aid in suggesting a background for the geese, and for many another painting.



To many people the half-way stages of a painting reveal more of the technique of the artist—more of the labor pains—than when it is finished. Whatever vitality the drawing has, is not obscured by distracting detail. Using Chinese ink for the darks, and opaque white for the whites, the simple blocks of tone are laid down with a red sable brush. In this drawing, the gray back of a piece of illustration board was used instead of the usual rough white. Whatman's water color paper



FINISHING up the painting is fun, but whatever faults or successes it has are inherent in the earlier stages. No amount of "tickling up" will cover up bad draughtsmanship.

The background of blue is laid on with a large brush. In this instance two tries were made before the right blue was found. The first coat jumped too much and did not stay behind the geese.

For the sake of economy, covers of *Audubon Magazine* are limited to two colors—black and one other. That is why such gaudy morsels as the painted bunting never appear on our covers. There are two ways of using the second color; one, as a solid block of tone

behind the birds as in this painting; the other, to introduce it into the bird (such as the red throat of a rose-breasted grosbeak). A bluebird would be out of the question for it would require three printings—blue, red, and black. Some day we hope to find a way to use more colors without too much cost.

BELOW, Mr. Peterson drops in at the engravers' shop to give the proofs the once over. There is still time to make small changes before the magazine goes to press. Rarely are changes necessary, for a good engraver anticipates the artist's demands.



flights of fancy ✧ ✧ ✧

IN the "Proverbs" of John Heywood, printed in Merrie England in 1546, there is to be found in Part I, Chapter IX, the following:

"Better one byrde in hand than ten in the wood."

The modern equivalent for ordinary usage is: "A bird in the hand is worth two in the bush." This is to be taken as an economic maxim and not as a fundamental principle for the conservation of wildlife resources. The National Audubon Society does much better in that direction with its motto: "A bird in the bush is worth two in the hand." But the literary point about the Heywood "Proverbe" is that it is one of the earliest printed records (in English) of common phrases linking birdlife with human relations.

"As crazy as a coot" is a common phrase. Perhaps too common. Who started that slander by word of mouth or first uttered it as a libel in print? Look around now at a world engulfed in war. Coots never were crazy enough to start anything like that. If coots had lawyers, they would have filed suit long ago for the use of such a derogatory and unjustified phrase and would have cast the users thereof—or their heirs, assigns, executors or residuary legatees—in heavy damages.

"As silly as a goose" is another legal case of the same type. A man—or a woman—may be referred to scornfully as a "loon." Again the derogatory note is on the wing. A loon is a pretty smart bird. And what's so silly about a goose that "Man, proud Man, dressed in a little brief authority" can point to it with supercilious mockery?

The excuse offered for taking the loon's name in vain is that the natural

cry of the loon is like the hysterical laughter of a demented person. Still, it seems an unfair attack on the character of a respectable and intelligent bird. There are known cases, scientifically attested, of many demented persons. There is nowhere in evidence any scientific record of the discovery of demented loons. The defense rests.

A man may be called a "gull" or a "gullible" person on the presumption that he will swallow almost any bait. But the average gull profits by what it swallows, whereas the human "gull" becomes "sicklied over with a pale cast of thought" at the very least, after swallowing, by foolish choice, the wrong kind of nourishment. A much better use of the life and habits of the gull is made in the phrase: "As free as a gull." It was in that spirit that John Masfield, who knew the salt water trail and the life on the ocean wave, wrote of the gulls:

An' merry's the life they are living.

They settle and dip;

*They fishes; they never stands watches;
they waggle their wings;*

*When a ship comes by, they fly to look
at the ship*

*To see how the nowadays mariners
manages things.*

To get back to solid ground, or pretty close to it, there is another modern flight of fancy that goes back to the "Proverbs" of John Heywood where it is written: "One swallow maketh not summer." That's all right. Nothing actionable there. In fact, ornithological records will back that statement. In the "Anatomy of Melancholy" Burton wrote: "Birds of a feather will gather together," which

✧ By JOHN KIERAN

is good ornithology, too. And no offense. To "sing like a nightingale" is a notable bit of flattery to offer any human voice.

But a man whose toes—or feet—turn in as he walks is called "pigeon-toed." Now, who ever saw, unless it was an accidental or congenital cripple, a pigeon whose feet were not set straight on its legs? It's true that a pigeon does waddle a bit when it walks. The fault, dear Brutus, is not in its toes but in its whole construction. The body turns, rather than the toes, in walking. The merit of a pigeon is not judged by its walking, anyway.

✧ ✧ ✧ INFORMATION—PLEASE

What do you know about the origins of these and other such figures of speech? Let us hear from you.

A little bird told me
Birds of a feather
Feather in his cap
Bird that fouls its own nest
Bird in one's bosom
Kill two birds with one stone
Just ducky
Throat like a swan
Under his wing
Eagle-eye
Dove-tail
Dead as a dodo
He laid an egg
Hides his head like an ostrich
Water off a duck's back
Let's talk turkey
Falcon-like
Hawk-eye
Wise old owl
Wily as a crow
Proud as a peacock
Busy as a wren
Silly as a goose
Crazy as a loon
Hat like a bird's nest



The derogatory phrase "stool pigeon" comes about through the lowering of the character of some birds through association with humans. Left to itself, no respectable pigeon ever would have turned up as a "stool pigeon." But man has used ducks, pigeons, geese and other wild birds as "stool pigeons" and "stool ducks," which is to say, chained lures or tamed traitors to bring free birds within reach of hidden guns, ever since gunpowder and hunters began to go together. The onus in the phrase "stool pigeon" is not to be attached to the bird family but to the human race.

"As dead as a dodo" is a telling phrase—and it tells a sad story that is of no credit to human kindness or human intelligence. "As wise as an owl" is perhaps a bit flattering to the owl, which is no wiser than many other birds. "As gentle as a dove" is a kindly phrase, but not more so than the dove deserves. "Wild as a hawk" is a good phrase. It smacks of the ordinarily untamed spirit of the ranging raptors.

"Happy as a lark" is a joyful phrase and an excuse for closing this somewhat complaining essay on a high note. It's true that the lark is no happier than any other bird, but men may be excused for ignorance on this point. As so many poets have pointed out with rhyme and reason, the lark, springing upward from the grass and singing as it soars out of sight, seems to be the embodiment of a rejoicing spirit. With regard to some of the derogatory phrases quoted, the Order of Birds may be justly offended. But it is written in Edmond Rostand's "Chantecler" that, in memory of St. Francis of Assisi, the birds are willing to forgive much to the erring human race.

Parce qu'un homme a dit: "Mes frères les oiseaux."



The Spirit of a SANCTUARY

By Alan Devoe

THIS morning the pastures were white with frost, the earth hard with its winter-hardness. When I set out across the fields the frozen stubble creaked and crunched under my boots, and my breath made a smoky cloud in the still and bitter air. A wintry morning, for fair . . . and for most of us a winter in the heart.

It had been a terrible thing to hear the radio this morning: more peoples of the earth caught up in war, more children starving, more men gone down to death before the dive-bombers and the rushing tanks.

In the wintry stillness, through the dim early morning light of this leaden day, I walked slowly and very somberly. Almost it was possible to feel that perhaps those bleak philosophers are right who would persuade us that this war is no strange and special thing, uniquely product of our human errings, but only a manifestation of a tendency that pervades all nature's marrow, and therefore pervades ourselves who are but a part of nature. Almost it was possible, this morning, to forget entirely the scrupulous scientific demonstrations of men like Allee, and their establishment, upon a biological basis of laboratory experiment, of the ancient truth which in a less distracted day our hearts had known intuitively: that war is not a natural pattern, not a part of nature's primordial tissue, but a device of our poor humanity.

Even for a naturalist, who is perforce at least in part a scientist, the laboratory-truths, the textbook-truths, are easy to forget in a mood like mine this morning. I had heard the radio, and read the newspaper, and these had wrought a dark comprehensive despair not to be dispelled by recollecting the precise phrasings, the neat chains of logic, by which such a demonstrator as M. F. Ashley Montague has argued unanswerably his scientist's assurance that war does not exist in nature, and that our present kind of woe is of our special and unprecedented devising.

The brook rushed and tinkled icily, the frozen grasses on the banks of it whispering their brittle winter-sound. I made my way to a big willow-stump, near a bend in the brook where the current rushes and swirls among boulders that are patterned by the numberless pebbly cases of caddis-worms, and I sat down on the stump and stared at the dark tumbling water. I stared a long while at it, my thoughts lost in the black speculations that throng a mind when it starts from a miserable mood and then runs idling; and suddenly I noticed, out of the corner of an eye, a



little movement of a form amongst the current-patterns of the water. It was a muskrat, swimming.

With his small sleek head just above the icy water, the muskrat came paddling upstream toward me. Within a moment or two after I had first seen him, a dozen yards away, he was abreast of me; and now, almost at my feet, he swerved his course and clambered, dripping, upon a boulder that I might have touched with my outstretched hand. He sat close beside me now, in the glimmering winter daybreak, and looked at me gravely, unfrightenedly, companionably, and began the preening of his dark drenched fur. We sat a long time together, the muskrat and I, and it would be hard to say what thoughts and half-thoughts were born in my mind out of our shared dawn-watching.

I thought of the muskrat's life-history, perhaps: the way of his birth, in the dark bank-burrow, and of his moonlit glidings and divings and fraternizings with his fellows in the secret rush-bordered pools of the creek, and of his browsings among the wet earth-cool bulbs of the wild lilies. Perhaps I did not think at all, except the dim sub-thought that in all the muskrat's life in my sanctuary-acres no harm had ever come to him, and that now he thus sat close beside me, no terror in his wild heart. Perhaps, simply, a mood was conveyed to me, more deeply than to the mind; there was renewed in me the ancient insight—call it a kind of pre-rational faith, or call it "deep-knowing" as Algonkian Indians do—that let me feel once more what I had bitterly lost when I began my walk: the old, old peace of earth. Could I say, precisely, what kind of profound inner renewal came to me, out of the small adventure of the companionship of a happy muskrat in this morning's bitter

dawn, I could better say what I want this article to say: that we all of us need, in such a time as this, a periodical refreshment of our spirit, to keep us sane and to preserve our faith; and that now, more than ever before, we can find it inestimably rewarding to maintain some little piece of land—a hundred acres, a dozen acres, a tiny dooryard garden—that is kept inviolably as sanctuary.

Sanctuary—a place of peace

It is usual, of course, to say that a wildlife sanctuary is desirable because it gives a shelter to wildlife. Clearly enough, that is true, and it is a fine and sufficient reason for a sanctuary. A sanctuary is a practical thing, a conservation-aid; and conservation of wildlife, as no reader of *Audubon Magazine* needs said to him, is a desperate need, expressible in the strict statistics of our American national economy, expressible indeed in dollars and cents. In a land where, sometimes our basic policy seems to be to "sell more licenses," it is imperative that all of us, who are able, perform at least the minimal counteractive service of giving every encouragement to the harried birds and beasts that are (or should be) a national possession of us all.

But, though it is usual to urge a wildlife sanctuary for the wildlife's sake, there needs saying, too, the other portion of the argument. We are so accustomed to the word "sanctuary" that we forget its root. Its root is *sanctus*, and *sanctus* means the holy. A *sanctuari*us is not alone a place where the grouse may hide from the gunners, nor a guarded marsh where the wildfowl may gather, nor a quiet forest where unmolested deer and 'coon and fox may go their ancient way. It is not alone a place of peace

for the animals. It is also a place of peace for man. It is whatever little portion of earth he can put apart and cherish, to keep not only as resort for wild things but as resort for his own soul, when it is troubled and awry. It is any unviolated place, big or little, that is dedicated to keeping alive the old deep human dream of Eden: the vision that is profoundly meaningful to everyman's inmost heart, but that now, in such a day as this, must often grow dim and nearly lost, like something hopelessly far away and long ago.

Partly place—partly spirit

In these terms, a sanctuary does not need to be an enormous place, or a stately place, or a great patrolled acreage. It is a sanctuary, I think, that a friend of mine in New York has; though the whole of it is a tiny midtown backyard, with no greater forest than a single ailanthus tree and no wilder shrubbery than an ivy-vine. My friend keeps suet there, and a dish of sunflower seeds and fine gravel, and a bird-bath that was a baking-tin. He has had hermit thrushes visit him, in that secret backyard hidden away from the traffic-roar, and kinglets and bluebirds and many juncos. It is a good thing, to be sure, that these small wayfarers should have found a hospice in the center of Manhattan . . . a good thing in terms of dollars and cents, for are we not told that 21% of a bluebird's food is beetles and that a junco eats a quarter-ounce of weed seeds in a day? But it is a still better thing, perhaps, or at least as good a thing, that that friend of mine, who has good cause to be often shaken by the black bewilderments of our day, can look now and again from his window and in a quiet moment of withdrawn watching can re-find—in the small songs of a chickadee, the

little merriments of a kinglet, the gentle sounds of bluebirds—a saving symbol of the old peace that still lies at the heart of things.

No, a sanctuary need be no elaborate place. It can be a dozen acres that a farmer sets aside, leaving a field of shocked corn, leaving brush-heaps for shelter, letting the sumac flourish, giving the ragweed its fecund freedom. It can be a single acre of garden, where a man plants native mulberry for summer birds and perhaps bayberry and Virginia creeper for winter ones. (Roger T. Peterson's "Song-Bird Sanctuaries," published at 25c by the National Audubon Society, is a helpful source of planting-lore). It can be a great woods, to give haven to mammals as well as birds, or it can be just a tiny dooryard where suet is faithfully kept for the beguilement of downy woodpeckers. The dimensions of a sanctuary are not the most important thing. For a sanctuary is only partly a place, and also partly a spirit.

My sanctuary in the Berkshire hills

My own sanctuary, upon which the winter now lies in its whiteness and silence, is a hundred-odd acres of Berkshire foothills. A trout-stream, which might equally well be called a heron-stream or a muskrat-stream or a water-thrush-stream, wanders for three-quarters of a mile through it, and the northeastern part of the land is a little hemlock-wooded mountain called Phudd Hill. To entitle this land to designation as a sanctuary I have not done very many things. I have posted the acres against trespass; I have made a few special plantings (of sunflower, sumac, common elder); I make a faithful winter round to scatter grain in the snow in the shelter of the hemlock woods, and to chop holes in the heavy ice of the brook-

pools to afford drinking-places for the deer and the foxes and the birds, and to leave here a lump of suet and there an old bone and over-yonder a handful of mullein-seeds that I gathered in the fall. That is the way my sanctuarian's chores run.

And what do I get out of it? I get a good many kinds of things. I walk up the old wood-road, in the snowy stillness of the winter morning, and I see the patternings made by the cleft hoofs of the deer in the night; and sometimes I see the deer themselves, unterrified, only a little startled and alert, watching me and not fleeing. They have found, perhaps, one of the caches of windfalls which I have gathered from my orchard and scattered in the woods for them. Deer do not come so close, or stand so peacefully and unafraid, in woods-places where men go gunning for them. I can see the mist of their breaths in the cold windless air, and the look in their dark eyes.

I walk on up the wood-road, through the drifted whiteness among the hemlocks, and there are many other things to see. There are the tracks of the cottontails and the tracks of crow and fox and weasel, and brush-marks of owl-wings and hawk-wings. There are the omnipresent tree sparrows and juncos and nut-hatches and downy woodpeckers, more of them than on any other acres in this countryside. Deep in the heart of the hemlock woods there is a company of pine grosbeaks, uttering their low sweet warble, perching so close to me among the snow-laden evergreens that I could almost put out my hand and touch them. They have come to this place now every winter for four years.

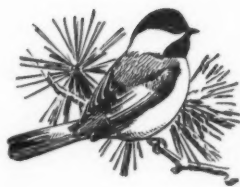
The sanctuary's web of life

My sanctuary affords me many sights. It also affords me insights. I

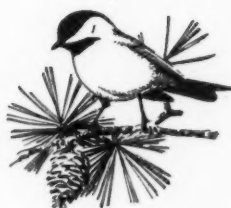
have learned what a shallow and acquired thing is the man-terror in wild hearts, and how very little of human friendliness is needed to dispel it. I have learned—better than I could have learned from the textbooks of ecology—how sure and subtle is natural economy, and how intricate its working; for I have extended hospitality to shrikes not less than warblers, red squirrels not less than gray, sharp-shinned hawks along with red-tailed ones, and have seen the web of life hold a constant texture, better than it might have done had I undertaken to strengthen this strand and weaken that one. I have seen a good many things to make me happier, and a great many things to make me wiser.

But chiefly the thing that my sanctuary has afforded me is the thing that cannot well be put in words. I tried to hint at it in telling of how I was companioned by a muskrat in the bitter dawn of the day on which this is written. Five minutes ago there was a calling of chickadees outside the window, and I raised the sash and there was a flutter of wild wings, and now, at this moment, three bright-eyed little black-capped birds are perched on my work-table, cracking sunflower seeds. They know me intimately. They have perched on my hands and shoulders for many winters now, and my workroom is not any longer an alien place to them—alien as humanity is in so many ways alien to its old wild home—but congenial as the hemlock-woods, friendly as a hedgerow.

For many things in the world, perhaps for the best things, there are no words. But at least it is possible to say, inadequately, that in making a sanctuary for birds and animals we make also something more. We make a sanctuary, most rewardingly, for our own turmoiled human hearts.



The Director Reports to You



THE Audubon wildlife sanctuaries have been brought into existence by the efforts of two generations of Society administration and with the financial help and moral backing of untold thousands of Americans.

But the sanctuaries can never be made secure beyond need of further vigilance, because other forces are constantly reaching out for them. Our difficulties in maintaining them, nowadays, do not as frequently involve direct assaults upon the birds by plume, meat or egg hunters; we have to contend, however, with an indirect but more powerful force—commercial companies seeking to exploit resources, and even sometimes local government which envisages other uses for the lands which we lease or own for the protection of wildlife.

To these conflicting claims our Society does not present a fanatical and unreasoning front. At least, we are not seeking to maintain the wildlife sanctuaries at the cost of greater human values. But it is our experience that, in general, genuine human values are enhanced by the existence of the sanctuaries, and that there is almost always some other turn that public and private enterprise can take for legitimate satisfactions without sacrificing what has been built up. Take for instance the recent case of

Spoonbills Versus Oil

For the last ten years this Society has maintained regular warden service at the two spots in the U.S. where the

roseate spoonbill—probably the most sheerly gorgeous bird in our avifauna and one of our rarest and most endangered—still consents to breed. One of these breeding grounds is at the Vingt-un Islands in Galveston Bay. The Garden Club of Houston succeeded in 1937 in getting the legislature of Texas to declare this spot a state wildlife sanctuary, where trespass is forbidden without special permission of the Fish, Game and Oyster Commission, and to “in anywise molest” the birds is illegal. Warden service has been maintained at the islands since 1932 by the National Audubon Society. It’s been a grand sanctuary, of which Houston, Beaumont and Galveston have been proud. They have taken an intense interest in the spoonbills, ibises, herons and egrets nesting there.

Education and the Political Football

But, with full knowledge of the status of the wildlife sanctuary, the School Land Board last August advertised for bids on mineral development of all sections of submerged land in that part of Galveston Bay. This means exploration and drilling for oil, with wildcatting in the Bay itself. Well you may ask why there should be more drilling when the oil wells of Texas are being strictly rationed in production, and many of them even capped. The main motive is the competitive interest of oil companies in establishing reserves and, in some cases, in acquiring substantial produc-



Allan D. Cruickshank

The roseate spoonbill is an asset to Texas and the nation.

tion in the Texas fields. Also, the proceeds of sale or lease of state lands go to the School Fund.

It's an old political game—income from a particular source is allocated to the budget item covering education, with teachers' salaries, school buildings, equipment, etc. Education being both a necessity and a high-minded undertaking, as well as very close to the emotions of people with children, the sources of the public

educational funds are not always as closely scrutinized as, perhaps, they should be. In fact, the tendency is to regard any sources as purified by the ends to which the funds are put. Further, local government is thereby relieved of finding the school fund in the general treasury—which leaves that much more of the taxpayers' money to be allocated as the party in power prefers.

Our protest to the School Land

Board was prompt and specific, and we are happy to say that the State Fish, Game and Oyster Commissioner, representative of the U. S. Fish and Wildlife Service, The Garden Club of Houston, the Houston Outdoor Nature Club, the Mayor of Galveston, and the Beaumont Rod and Reel Club ranged themselves on our side.

At issue were not only these particular spoonbill islands but, also, all the other islands strung along the coast on which non-game water birds congregate annually to nest. The State of Texas recognizes most of these as wildlife sanctuaries, but many of the leases permit coincidental mineral development. To that extent these sanctuaries as such have shaky titles from the viewpoint of long-range policy. If the birds were driven from the Vingt-un Islands it would mean more than the loss of this wonderful colony; a breach would be made in the whole sanctuary front on the Texas coast.

What Do Texans Really Want?

At the hearing of the School Land Board on October 6, which your Director was invited to attend and where all this was threshed out, every courtesy was extended to all wishing to express their viewpoint. Although the cash bonuses bid the state on three of the four sections of submerged land adjacent to the spoonbill rookery averaged around \$30,000 each, even the representatives of the bidding oil companies seemed interested in learning more about the birds. Your Director and his associates couldn't tell whether the people of Texas, had the matter been referred to them, would vote for protection of the bird colony or for the sale of the rights for maximum cash benefit of the School Fund. Neither could the members of the School Land Board or

representatives of the companies.

But the Board finally notified us that they were rejecting all bids received—the highest one \$6,000—on the section of submerged land in which the islands lie (so far so good). And that it was adding a clause in all leases on four adjoining sections to restrict drilling operations to areas more than fifty yards from the islands (this does no more than comply with the existing law.) And that it was also adding a clause that provides that no drilling operations shall be carried on in those sections during the six months March through August, when the birds are congregated at the islands (this, however, vitiated by an emergency cancellation clause).

We are grateful to the members of the School Land Board for their consideration of the value and welfare of the birds. But the fifty yard safety zone we cannot regard as sufficient. It is not so much that the birds are liable to be disturbed by the noise and commotion of nearby drilling as that pollution may ruin feeding grounds on which the birds depend for food for their young. The effect of this would be to drive the birds away just as thoroughly as if the islands themselves were invaded. Risk of oil pollution is always to be reckoned with—in spite of the best efforts and intentions of the operators and the use of the most foolproof available equipment.

So we're asking for a safety zone within one mile of the nearest point of any of the islands; that, we believe, would reasonably protect the breeding grounds and set a satisfactory precedent. We contend that basically a policy benefiting the birds also benefits the school children and citizens in general, and therefore the oil companies too. The complication about protection of spoonbills today is only one small manifestation of the

over-all problem that confronts the nation—the need for sound state and national policies for conservation of natural resources, whether animal or mineral. This is a problem to which we must devote our best thinking—both as individuals and as organizations. Let us not postpone the task of thinking it through. We shall discuss this subject further in this column in the months to come and, in the meantime, we shall be glad to receive your comments and reactions.

Save the Ivory-billed Woodpecker!

The conflict of interests in the case of the last remaining habitats of that king of woodpeckers, the ivory-bill, is acute, and the values are considerable. For the only known remaining habitat of this creature, one of the most remarkable birds of our avifauna or, indeed, to be found anywhere, is a fine big stand of virgin timber on the flood plain of the Mississippi.

Such is the tract of sweet gum, red oak and ash forest of the alluvial type along the Tensas in northeastern Louisiana near Tallulah. Here the ivory-billed woodpecker is making a last stand against total extinction. Its seeming dependence upon virgin timber, with many decaying trees, renders it vulnerable.

The timber on this tract, which is also the home of wild turkeys, deer, bear, wolves and panthers, is the property of the Singer sewing machine outfit. And though it has been, since 1926, a state wildlife refuge, the state has not acquired title but has prohibited hunting and trapping there.

War Pressure for Lumber

In the meantime the National Park Service, as well as Louisiana members of Congress, have twice tried to obtain National Park status for this area,

but the bill has never been reported out of committee; now the war pressure for lumber production, especially gum veneer, has brought a crisis to the Singer forest tract and all its inhabitants, of which the ivory-bill is clearly the big shot.

For the Chicago Mill and Lumber Company, which has been logging the primeval timber under contract with the Singer people, acquiring title to the cut-over land as it goes, has speeded up its saws. At the rate that logging is now proceeding there, the whole forest will soon be down.

Your Executive Director has been on the job with the Singer Manufacturing Company and the lumber people, with the lumber section of the War Production Board, the Secretary of the Interior and his aides, the Chief of the Fish and Wildlife Service and the Director of the National Park Service. The National Parks and American Forestry Associations have demonstrated great interest and offered the fullest cooperation, as have many Louisiana citizens and the Conservation Department of the Pelican State.

Taxation System at Fault

Everything looks fine—except the Chicago Mill and Lumber Company, which is the key to the situation. Its board chairman has stated flatly that it can't give up a single right enjoyed under its contract with Singer. He takes the stand that to abandon cutting even a few sections along the Tensas means dropping people now on the payroll. As to profits, he maintains that the company can expect little under the limitations imposed by federal control today; that it's simply trying to avoid a loss for itself and its employees. Moreover, that it feels it's making an important contribution to the war effort.



National Park Service

This virgin forest in Louisiana is worth saving for the trees alone, quite aside from the fact that it is the home of the ivory-bill. Dr. James T. Tanner lends scale to these giants, products of centuries.

We don't take the attitude of *blaming* the lumber company. It is not

without right from a business point of view. If there is something funda-



Arthur A. Allen

Ivory-bills exchanging places during incubation, the male leaving the nest.

mentally wrong it is with the taxation system on standing timber; as matters are now, no one, apparently, can make money on timber unless he makes a quick cut and clears out with the cash he can get. To hold forest land is to see it taxed to death on high valuations year after year, whereas a tree yields a revenue only once—when you cut it. That is when the tax should be paid. But the opposite being the case, delayed logging and conservation are discouraged. Further, we have never had in the federal government an over-all production control policy relating to all kinds of timber, whether owned by federal or state governments or private interests.

No policy has been set up to meet the peak demand of war conditions, or to take care of perennial peace slumps in the lumber business.

In the meantime, the ivory-bill's days in Louisiana seem numbered, unless the government acts pronto to set aside forever as a wildlife refuge or national monument the remaining sections of uncut primeval timber in the Singer tract.

Life and Times of the Ivory-bill

The story of this majestic woodpecker is contained in a book reviewed elsewhere in this issue.

This book is the result of several years' research. The project originated

at Audubon House, in an effort to find means of preserving and restoring this wonderful species. The first step, obviously, was to find out what the natural requirements of the ivory-bill are, and then how they can best be maintained. In short, only a scientific basis for the conservation of this or any other animal can have lasting value. So a way was found by the Society to sponsor and finance field research in tune with our rather slender available resources. With the cooperation of Cornell University, the project got under way, Dr. Allen selecting as Audubon Fellow the best man he knew for the work—James T. Tanner.

The book makes grand reading—the story of how Tanner tracked down one of the rarest and wariest of birds, recalling the adventures of Audubon and Wilson with this same species. But we will not try to retell the story here. The important point is the peril to the ivory-bill revealed by these studies, and the suggestions for a conservation policy. First it is necessary to understand that this noble woodpecker is recognized as beneficial by all; its food is chiefly insects found under the bark of dead trees; living trees benefit from its habits; standing dead timber, such as one finds in virgin tracts, furnish its essential food supply. Especially important is the fact that logging eliminates the older trees. Selective cutting, if applied to these, has as devastating an effect as if clean cutting were done. Tanner reports that no other factor in the approaching extinction of the ivory-bill equals logging; in fact, he feels that all other forces put together are still inconsiderable in comparison, although it is possible that, with the present numbers of the birds so low, a secondary factor such as collecting might actually be the operative cause of final destruction.

Whatever action is taken, rest assured that we are doing everything in our power to save the ivory-bill.

Thar She Blows

At the Second-Chain-of-Islands, Texas, a high wind hit the principal roseate spoonbill sanctuary on September first. This is also the spring and summer home of thousands of reddish and snowy egrets, American egrets, night herons, skimmers, and terns. The hurricane cleaned the islands of every bush and tree more than a few inches high, so that in the 1943 breeding season the great waders which nest in the taller vegetation, such as spoonbills, American egrets, and Ward's herons, will find much of their preferred habitat laid waste.

However, many a hurricane has blown all such birds out of the skies above the track of its desolation. Yet the vegetation and the birds come back; nature in Texas is adapted to the hurricane, or, at least, fitted to repair the ravages swiftly.

War or No War

The Bull's Island tours in South Carolina, in spite of all the difficulties of wartime travel, are carrying on, with excellent attendance. Mr. Sprunt meets each tour group in Charleston, driving them to the landing opposite the island, where they go across, on a government boat, to the peace and charm of Bull's Island. Board and lodging is provided by the charming guest house, and the wildlife is just as pre-Adamite as ever. Tours are on Monday and Tuesday, and Friday and Saturday through December.

Mr. Sprunt—practically a Charleston institution in himself—has just covered a two thousand mile trail through nine states, giving seven lectures on the way and addressing some

twelve hundred people. Colleges, nature clubs, service clubs and many others turned out to hear him, to learn about Audubon work and to see his beautiful colored motion pictures.

Meantime, Bert Harwell burst upon the Middle West, covering seven states in a twelve day lecture tour, astride Paul Bunyon's ox, we can only presume! He spoke to some 3,600 persons. Enthusiastic letters to us mark his meadowlark trail through the corn belt, as he thrilled audiences with imitations of birdsong and colored photographs. Bert says they treated him mighty well, too.

Threshed Out in Meeting

There was the usual Annual Meeting of members of the Society, held on October twentieth, though without the convention lectures, dinner and pleasant social activities that have been enjoyed in times of peace.

One of the first matters for attention was the election of new directors to replace those whose terms have expired. For term expiring in 1943 there was named Dr. James J. Murray of Lexington, Virginia; for term expiring in 1944, Dr. William E. Wrather of Dallas, Texas, and for terms expiring in 1945 the following: Mrs. Francis B. Crowninshield of Montchanin, Delaware, Mrs. Paul Moore of Convent, New Jersey, Mrs. Walter W. Naumburg of New York City, Mr. G. Lister Carlisle of Norfolk, Conn., and Mr. Guy Emerson of New York.

The reading of the Treasurer's report by Mr. Carll Tucker brought up the matter of salaries. Our President, Mr. Guy Emerson, asked for comment and, as none was proffered, vouchsafed some views of his own. "It is one of the odd characteristics of all annual meetings and treasurer's reports, that a good many members like to com-

ment in the public print and in letters to us, but do not have much to say at annual meetings. I find that is true of almost every organization I am connected with. It is a fundamental tendency of human beings to criticize organizations like this one on the payment of salaries. I happen to be working in Washington with the Red Cross. We have looked back on the records for sixty-two years with care; we dug up, in a criticism research, everything in the nature of a criticism we could find; we got a list as long as your arm. For sixty-two years we could trace criticisms on Red Cross salaries.

"Now, having been connected with charitable and welfare work for some thirty years, I can understand that, because there is something in everybody's nature such that, when giving money to a cause which touches our hearts, we expect the whole dollar to go directly to the widow, the orphan or other object of the cause. Now the people who work on this welfare business must have three meals a day and clothes to wear and, while they are devoting themselves to welfare work do not expect to make money on it, they have to be paid reasonably well.

"Every National Audubon Society salary of any substance is known to the Board of Directors and is approved. I am entirely satisfied with the salaries paid individuals in this organization. I am sorry that they are not larger and, if there were any possible way I could get them increased, I would like to get them increased. I have no apologies to make for them. I think that, compared with the kind of work that is being done in any organization in this part of the country, they will stand scrutiny. The men and women receiving them are devoted to the cause. I am not for a niggardly policy in running this show. The peo-

ple who give us money do not think that a lot of people should run the Society by starving. They do not expect us to get second-rate help in running the Society. The policy of the Board of this Society is to run it fairly and decently and not on the basis of any theory that we ought to expect someone else to come in and work for half or no pay for this organization while we on the outside get decent salaries. I hope this may bring out some discussion. There may be some radically different views, but so far as I know this subject has never come up in a meeting since I have been President and I thought I would like to get it on the table."

Scrap Metal from Hunters' Shells?

At this same meeting Mrs. Harry H. Patrie, representative of the Brooklyn Bird Club, appeared as a delegate to bring up the relation between hunting and the war effort. Hunters, she stated for her Club, are shooting away valuable shell metal and powder. Why shouldn't the National Audubon Society back a movement to close hunting for the duration? There was much discussion and later that day the matter was taken up at the Board of Directors' meeting.

Be it said at once that this Society will aid in any scrap metal drive which is an open and direct one, and not a stalking horse. For instance, we have offered the iron fence and metal trim from Audubon House.

But our Directors stated that, were we to undertake a campaign to stop all hunting for the duration, in order to save scrap metal, we could rightfully be charged with use of a subterfuge in efforts to obtain greater protection for game birds. We object to climbing on board a patriotic band wagon in order to gain that end. Furthermore,

the end we have in view is not and never has been the abolition of all hunting. We are in favor of, and we perpetually work for, hunting laws and regulations that will govern the take of game so that an adequate breeding stock may be maintained. We have fought against increase of the game bird list to take in non-game birds; we have fought against the commercial exploitation of feathers from wild birds without fear of the opposition it has raised against us, and will never cease that fight. We would be willing to "offend" any individuals or groups, to maintain the principles for which we stand.

But we will not use the American flag as a subterfuge. We cannot, we regret, say as much for certain other conservation organizations. Almost everybody is justifying preferential actions now on the grounds that they will help win the war. Hunters are hunting, they say, to relieve the meat shortage. Some organizations are urging that goose and duck feathers be turned over to them, to be used as down in garments to keep soldiers warm—the proceeds of sale of such plumage to feather dealers, en route to the government, to be used to feather the organizations' own nests! Incidentally, Secretary of the Interior Ickes met the proposal as to salvage of scrap metal in shells and cartridges by distributing an appeal to hunters to save and turn in such metal *after* the ammunition had been used.

Hunters Rise and Fall

From the Cape Sable, Florida, area comes news from Warden Parker that he never saw as many hunters in that section as there have been recently; that he and the State Game Warden, for example, checked seventy hunters on and near the Ingraham Highway

on Sunday, November 15th, adding that there were some fifty cars and trucks down the road that day. Parker reports an increased tendency on the part of this year's hunters, faced with early depletion of their ammunition supplies, to kill everything in sight, regardless of laws and regulations.

On the other hand, our Lake Okeechobee warden reports that, though the duck season was expected to open with hunting camps booked solid, almost nobody showed up; there was a guide shortage; and fresh restrictions are popping up everywhere. For instance, on the southwest Florida coast no boats can stay out anywhere over night, even in bays and on rivers; no guns may be taken into a motor-powered boat. While the drop in hunting volume is far from as great everywhere, there are many indications that, taking the country as a whole, the waterfowl are getting a respite.

Lengthening Our Reach

Our educational program has, in recent years, been broadening its scope to include the whole field of nature, of which birds are only a part. In keeping with this policy, we are glad to announce that we have become sponsors of the School Nature League Bulletins which present in brief, interesting and popular form the up-to-date information on subjects in all the natural sciences. For the past twelve years these well-illustrated bulletins have been published by the School Nature League and used primarily in the New York City schools, but under our sponsorship their distribution on a nation-wide basis will be promoted. Among the subjects treated are small mammals, mammals in winter, bird nests, bird migration, woodpeckers, sea gulls, owls, wildflowers, weeds, trees, insects, frogs,

snakes, fresh water aquaria and terraria, fossil animals, the story of the great ice age, astronomy, clouds, and the work of Jack Frost. They are prepared or edited by authorities in the various fields for use by teachers and pupils, camp counselors, scout leaders, Audubon Junior Club Advisors and others interested in the teaching or study of natural history. One year's subscription (10 issues) costs \$1.00, and a complete set of back copies (75 issues) is available for only \$4.00.

This Is War, Professor

Ornithologists who want to sweep the seashore with their binoculars, watching for curlews and tattlers, skimmers and surf birds, will simply have to curb their enthusiasm for the duration, so far as we can learn. Some ornithologists have readily recognized the fact. Others, we learn, have expected the Coast Guard to make exceptions in their cases, in the interest of the purest of pure science. But the authorities from down on Barnegat Bay, for instance, reply in response to our inquiry, that it would be necessary to issue special orders to some 150 Coast Guards patrolling a small section of beach, and the Guards would inevitably be left with a sense of confusion as to who did and did not have the right to the use of binoculars on the ocean shore. Even an ornithologist armed with such a permission could expect to be challenged at every step to show his credentials. On reflection he would see that this was a serious waste of the Guard's time, too. It appears to us that we shall simply have to turn our attention to land birds, and let the Coast Guard give its undivided attention to enemy craft and saboteurs. And we will waive our riparian rights gratefully if we are sincerely patriotic.



The Changing Seasons

By
Ludlow Griscom



THE two months under review were characterized by violent and abrupt contrasts in climatic conditions over most of the country. Two outstanding events require separate mention. A tropical hurricane struck the coast of Texas on September 1; there was considerable loss of life among birds; worst of all, the breeding islands sustained severe damage; not only were the islands reduced in area but the shrubbery, which furnishes the nesting sites, was blown away. It will be interesting to see what happens to the nesting rookeries, when they return next spring.

In the extreme northwest the summer was cold and rainy, and September broke all records for low temperature. A remarkable cold wave swept down the whole center of the continent in late September. Eight inches of snow fell in North Dakota on the 25th, snow blanketed the whole state of Minnesota on the 26th; a "blue norther" in Texas on the night of the 26th sent the temperature to a fifty-year record low, and there was a strong cool wave in northwestern Florida on the 28th. Observers generally complained, however, that it had little seeming effect on bird migration. Nevertheless, the easterner notes with some astonishment the arrival of pine grosbeaks and snowflakes in northern Minnesota on September 20th.

East of the Great Plains, temperatures are variously reported as normal to warm. It was definitely dry in New

England, but every other section reports some heavy rain at least. Water tables were generally high, and interior points reported few to no shorebirds worth mentioning, due primarily to lack of habitat.

The northward flight of southern herons was, consequently, a failure at its northern limits (complaints by Minnesota, Chicago, New York and New England). It was, however, quite fabulous further south, especially in the interior, Missouri reporting an aggregation of over 1,000 American egrets; while Ohio now takes it for granted that this bird will be scattered in marshes all over the state, some aggregations consisting of several dozen or more birds.

Two outstanding generalizations can be made about the fall migration of land birds. Those species wintering in Central and South America began moving southward at least two weeks ahead of normal, and this tendency became more marked northeastward. Thus in New England it affected every species, both breeding and transient, from further north. In Texas, however, a few warblers only were very early. The departure of this group was also very early northeastward, but further south the mild temperatures produced a long drawn-out and unhurried migration. The other generalization is that the late September and October groups of migrants were generally late in getting started, and the arrival of winter visi-

tants was late from New England to southern California.

Excepting only in New England, where September was too uniformly mild to warm, small land birds are reported as particularly numerous. The outstanding performer in the East was the Cape May warbler, which staged the greatest fall flight in its history. It was actually second only to the myrtle in Ohio, and there were numerous records in parts of the Atlantic seaboard, where it is usually very rare.

The shore-bird migration began early and ended early. The numbers of the abundant and common species were forty percent off in New England, but the flight was regarded as good in the Carolinas and southern California. Hudsonian curlews were up on the Atlantic seaboard, interior points and the coast of Texas. Attention is called to the fact that the golden plover is now a regular fall transient in the interior. It is good to hear of avocets on the Carolina coast and long-billed curlew in western Florida. The curlew sandpiper was found on Cape Cod.

Ducks apparently did well, and the early flight of tipping species was good everywhere except the extreme northeast. North Dakota reports good flights of other species, particularly canvasback and geese. Geese reached

North Carolina September 20th, Missouri September 20th and Texas September 25th; none appeared in New England, proving the totally different populations involved.

Good hawk flights are reported from everywhere except New England.

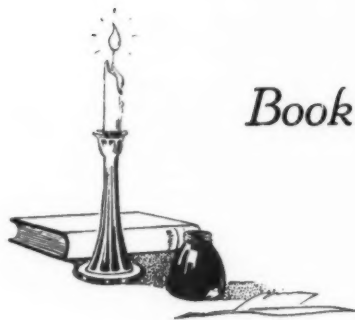
Gulls and terns tended to move south early. A little gull of Europe spent a month in Newburyport Harbor, Massachusetts, and another was found near Chicago on September 9th. Franklin's gull is increasing rapidly; this species reached a peak of a *million* birds on Sand Lake, South Dakota! No wonder some are moving east; a flock of thirty is reported from Chicago, and one showed up on Cape Cod, Massachusetts, September 7th. By way of exchange between East and West, a laughing gull was found in North Dakota, and a least tern at Toledo, Ohio.

Records of other "western" birds wandering east continues to increase. Lark sparrow and western meadowlark near Philadelphia; yellow-headed blackbird, Massachusetts; mountain blackbirds and a Townsend's solitaire in North Dakota. Southern California reports black and white warbler and red-eyed vireo, eastern species wandering westward. Southern species wandering northward: sooty tern, Pensacola, Florida, and blue grosbeak, Massachusetts.

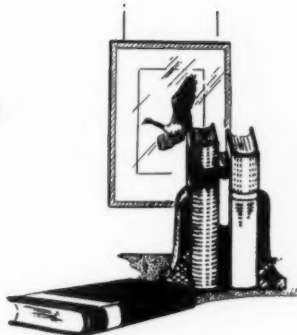
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Book Reviews



NEAR HORIZONS, The Story of an Insect Garden.

By Edwin Way Teale. 319 pp. Illustrated with more than 160 photographs by the author. Dodd Mead & Co. \$3.75.

Mr. Teale has been called a modern Fabre by some; others have pointed out his affinity to W. H. Hudson. As a nature writer, he is first-rate, and at least three of his seven books are among my top favorites of all nature writings. "Grassroot Jungles" first won him fame. Of "The Golden Throng," Maurice Maeterlinck, himself the author of a literary classic on bees, predicted "it will become the Bible of the bees." To me "Near Horizons" is even more exciting, for it tells not of one insect but of many. Almost every author has an idea for a book that is very close to his heart, a book he plans for a long time, one he hopes will be his masterpiece. "Near Horizons" is the book Mr. Teale has long been dreaming about.

Last summer I visited Mr. Teale's insect garden. South of Hempstead and east of Valley Stream, Long Island, an ancient orchard and abandoned farm sprawls down a hillside to a cattail swamp. Although there are countless gardens in the United States, this orchard area is unlike any plot on earth. It was developed as "a banquet hall for the six-legged," and when the neighbors heard about it they protested loudly. The very thought of attracting insects filled them with horror!

The watcher of insects is often regarded as a little "tetched." Mr. Teale writes: "I learned that a full-grown man peering into a grass clump, or stretched out prone to watch an ant-lion at work, is inevitably an object of curiosity and concern. If a

man beats his wife, squanders his fortune, or jumps off a bridge and commits suicide, the world will understand, if it doesn't condone. But if he begins to spend his leisure time associating with the insects, watching the minute dramas of their little world, people may condone but they rarely understand."

We who are interested in birds should know more about the world of insects, on which so much of bird life depends. There is no better introduction to this fantastic kingdom than this book, which is chockfull of absorbing information. The author is excellent literary company; he is not given to rhapsodies or "precious" writing but gives the impact of his experiences simply and clearly. On closing the book you feel that you know him just as well as his insects. Illustrated with the author's remarkable, beautiful close-up action photographs, this is essentially a picture book—a "handsome" volume.

Thirty chapters of text are captioned with such intriguing titles as: The House of Bubbles; Night in the Garden; The Knothole Cavern; Ghost Bugs, the Hills of Lilliput; Things that Bump in the Night; Insect Mystery Stories; War on a Rose Bush. There is also a chapter on Birds in an Insect Garden.

Some of the stories are downright fantastic. We learn of butterflies with legs 1600 times as sensitive to certain tastes as the human tongue; of the doodlebug that always walks backward; of a walking stick insect in which no male has ever been discovered; of the frog-hoppers' bubble-blowing mechanism that has baffled science for more than 200 years; of moths that migrate northward at the approach of winter; of the larvae of beetles so sensi-

tive to sunshine that they will crawl away from the light even if they have been decapitated. All these tall tales have been backed up 100 per cent by entomological research.

A friend of mine sent a copy of "Near Horizons" to the Commander of a P. T. boat in the Aleutians. He wrote back that it was the only book he had received that was not on war strategy or the history of Alaska, and added that it had become the favorite among his men, who now held long bull sessions about insects they had known back on the farm.

I heartily recommend this book for readers of all kinds and all ages. R. T. P.

TRAIL OF THE MONEY BIRD

By Dillon Ripley. Illustrated with photographs and end-paper map. 305 pp. Harper and Brothers. \$3.50.

Back in 1936, the author set sail with six friends on a 59-foot schooner bound for New Guinea. He spent a year and a half covering 30,000 miles and his engaging account of the trip includes all sorts of experiences from collecting birds to blistered heels. The armchair adventurer may thrill to the joys of a leisurely sea-voyage, of encounters with strange peoples, of penetrating into unexplored wilds, but he will also be impressed by the fact that exploring is tough work—the seven survived two appendectomies, a bad heel that grew fungus, food poisoning and bouts of malaria.

Commissioned by the Academy of Natural Sciences in Philadelphia to collect exotic specimens, Mr. Ripley trailed the money bird (bird of Paradise) and other birds little known to American readers into the unexplored wilds of islands that are now featured in the headlines of every American newspaper. He gives us interesting information about the amazing bower bird and its nest of twigs decorated with flowers and stones, about megapodes, unusual owls, crowned pigeons, cockatoos, parrots, racquet-tailed kingfishers and cassowaries; and his account of making ready to return to the United States with a cargo of skins and live birds reveals that the life of an ornithologist involves other talents than those of science. To ration food for forty-nine days for eighty-seven hungry birds was enough to make the head steward swoon when he was told to provide 2,000 bananas, 150

large melons, 2 crates of lettuce, 800 pounds of grain, 200 pounds of meat, 200 pounds of fish and a five-gallon tin of almonds!

This book, however, is much more than an ornithologist's account of an ornithological paradise. It is a sympathetic and human story of the native men and women who became friends of Dillon Ripley; and this book will help us understand those strange Pacific peoples whose fate is going to be more closely allied with our own in the world of tomorrow. M. P.

BIRDS ACROSS THE SKY

By Florence Lee Jaques. Illustrated by Francis Lee Jaques. 240 pp. Harper and Brothers. \$2.50.

Here is an exceedingly readable book, full of humor, written by a woman who, as a bride, was suddenly plunged into the busy and hectic world of ornithology. She soon found that feeding birds in winter, or morning strolls in spring to listen to bird song, had little relation to *serious birding* which lasted from dawn till dark, and sometimes from eighteen to twenty hours a day. If for no other reason, this book could be recommended solely for its encouragement to beginners, since Mrs. Jaques' story of her development from the identification of garden birds, to the many species of woodland warblers, to ducks that fly high over Minnesota marshes and to elusive shorebirds will inspire others to follow in her footsteps.

But the author goes far beyond that. Turning to the American Museum of Natural History, she gives gay accounts of activities behind the scenes in that great institution. Her husband, Francis Lee Jaques, a member of the Museum staff, has made many of the delightful backgrounds for the habitat groups which form one of the Museum's outstanding attractions. Collecting material for these habitat groups led the author and her husband over the length and breadth of this country, and even to foreign lands.

Intimate tales about some of the foremost ornithologists of our day, and their amusing and often amazing pursuits, add spice to adventures with birds in far off places. Each episode is a vivid word picture in a swiftly moving tale that carries the reader from east to west, to Panama and across the Atlantic.

The author's husband is one of the finest bird artists in America today, and his illustrations for this book are superb. In each picture he captures some moment of exhilaration—whether it is that of a startled great blue heron springing from a marsh, the towering Matterhorn rising skyward, or snow geese side-slipping down from a spectacular sky. The combination of writing and illustration in this book makes it a delightful gift, appropriate at all seasons. H. G. C.

THIS GREEN WORLD

By Rutherford Platt. With 135 photographs, 27 in color, by the author. 222 pp. Dodd, Mead and Co. \$3.75.

Superb in its plan and masterly in its execution, this book is a record of a true naturalist. It is a book for the bird-lover as well as the lover of plants, for more and more we are coming to realize the interdependence of all life.

More than anything else I feel in this book the author's eager joy in discovery, the wholesome curiosity of a true nature-lover to whom each day is filled with beauty and interest. And because he writes so simply and naturally of the world right at our doorstep, we share his excitement in discovering that buds are formed long before spring, and are on the seemingly bare tree branches all winter long—unfailing identification marks for those who have eyes to see; or that a tree is an example of the world's greatest waterworks; that roots are something more than obstinate anchors, being a vast system for collecting moisture and merging it into a river of sap; that each leaf is a dynamo powered by light, making food out of water and air, which in turn sustains the animal world.

We learn of the miracle of pollen, of the interdependence of flowers and insects, of the march of wild flowers across the meadows, commanded by the length of hours of light. We have a simple explanation of plant families, showing the layman how flower forms have evolved from Model Ts to the latest streamlined models, and making plain to us that we may see all these forms operating smoothly, with never a traffic jam, right in our own countryside.

The photographic illustrations, by the author, could only have been taken by



"For its wit and good humor as well as for its drawings 'Birds Across the Sky' will make friends the world over. Mrs. Jaques proves herself capable of deep understanding and direct writing."

DR. GEORGE MIKSCH SUTTON

Birds Across the Sky

By FLORENCE LEE JAKUES

Illustrated by Francis Lee Jaques

\$2.50

HARPER & BROTHERS,
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an artist-naturalist. The color photographs of minute plants of the forest floor show rare perception and sensitivity, while the photographs of trees are not only outstandingly beautiful from an artistic standpoint, but are unrivalled from a technical point of view.

This book deals with reality which cannot be touched by war. Man might be swept off the earth, yet this green world would still function unperturbed. All nature lovers must unite with me in thanking Mr. Platt for this unusual book.

M. McK.

THE IVORY-BILLED WOODPECKER

By James T. Tanner. Paper bound with maps and photographs. Colored frontispiece by George Miksch Sutton. Preface by Arthur A. Allen. 111 pp. National Audubon Society. \$2.50.

What a sterling contribution this is! It would seem to be the very model of what such a study should be. Detailed though it is in reality, the details are so well marshalled, correlated, and proportioned that one has almost no consciousness of them; the monograph appears to be a summary, in style and presentation, instead of the nearly definitive work that it is. That is what I would call thoroughly good organization and admirable scientific exposition. Many great scientists have never mastered exposition, by the way. They write books which can be referred to but not read.